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**PRODUCT: GEOLINEAR WOOD CEILING SYSTEM**

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**PART I            GENERAL****1.1            SECTION INCLUDES**

1. Linear Acoustical Wood Ceiling System including suspension hardware by Geometrik Manufacturing Inc.
2. Coordination with other trades that have parts attached to, penetrate through or positioned above the wood panels of this section.

**1.2            PRODUCTS INSTALLED BUT NOT SUPPLIED UNDER THIS SECTION**

1. Sound absorbing black glass fiber blanket 50 kg/m<sup>3</sup> density.

**1.3            RELATED SECTIONS**

1. Drawings and general provisions of Contract including General and Supplementary Conditions.
2. Section [ \_\_\_\_\_ ] – LEED Requirements.
3. Section [ \_\_\_\_\_ ] – Blanket Insulation
4. Section [ \_\_\_\_\_ ] – [Acoustic] partition systems.
5. Section [09 51 10] – Acoustic Tile
6. Section [21 13 00] – Sprinklers: Sprinkler heads in ceiling systems.
7. Section [23 37 00] – Air Outlets and Inlets: Air diffusion devices in ceiling systems
8. Section [26 51 13] – Interior Luminaries: Light fixtures in ceiling systems.
9. Section [28 31 00] – Fire Alarm: Fire Alarm components in ceiling system.

**1.4            REFERENCES**

1. ASTM A 641: Standard Specification for Zinc Coated (Galvanized) Carbon Steel Wire: 1992.
2. ASTM C 423: Standard Test Method for Sound Absorbing and Sound Absorbing Coefficient by Reverberation Room Method; 1990.
3. ASTM C 635: Standard Specifications for Metal Ceiling Systems for Acoustic Tile and Lay-In panels.
4. ASTM C636/C636M-06 – Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
5. ASTM E580/E580M-06 - Application of Ceiling Suspension Systems for Acoustic Tile and Lay-in Panels in Areas requiring Moderate Seismic Restraints.

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6. ASTM E-1264-98(2005) – Classification of Acoustical Ceiling Products.
7. CAN/ULC S702-97 – Thermal Insulation Mineral Fiber for Buildings.
8. ASTM E 84: Standard Test Method for Surface Burning Characteristics of Building Materials; 1991.
9. CAN/ULC S102: Canadian Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies
9. AWI (QSI): Architectural Woodwork Quality Standard Illustrated; 2008
10. CISCA: Ceiling Systems Handbook
11. Local Building Code – Current Edition

**1.5 QUALITY ASSURANCE**

1. Manufacturer Qualifications:
  1. Manufacturers other than those listed in Paragraph 2.1 are required to submit for approval prior to bidding per Section 1.
  2. Proposed substitutions should be submitted to the architect no later than ten working days prior to the bid due date.
  3. Substitution request should be accompanied with complete information including
    1. Product details showing design, size, edge condition, standard penetrations, mounting hardware with suspension grid;
    2. Sample (12" x 18") showing veneer, finish, edge condition etc.
    3. Acceptance of substituted products is contingent of the architect's approval and compliance with the specified criteria.
2. Installer Qualifications: Engage an experienced installer, approved by wood ceiling manufacturer, who has completed panel ceilings similar in design and extent to that indicated for this project and with a record of successful in-service performance.
3. Inspection: all work must pass inspection and approval of architect, as well as the local codes and regulations or authorities having jurisdiction.
4. Single-Source Responsibility for Wood Ceiling : obtain each type of Wood Ceiling from a single fabricator, with in-house shop drawings capabilities, in-house assembly and finishing capabilities, and with resources to provide products of consistent quality in appearance and physical properties without delaying the project.

**1.6 REGULATORY REQUIREMENTS**

1. Fire Performance Characteristics: provide wood ceiling components that are identical to those tested for following fire performance characteristics, according to ASTM test indicated:

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1. Surface Burning Characteristics: as follows, tested per ASTM E84.
  1. Flame Spread: 25 or less
  2. Smoke developed: 50 or less.

**1.7 LEED REQUIREMENTS**

1. Credit MR 4.1 & 4.2: For product having recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content. Include statement indicating cost of each product having recycled content [insert if required].
2. Credit MR 5.1 & 5.2: List of proposed regionally manufactured materials and regionally extracted, harvested or recovered materials [insert if required].
  1. Identify each regionally manufactured material, its source, and cost.
  2. Included map or other similar documentation, confirming the following:
    1. Driving distance between location of manufacture and Project site.
    2. Driving distance between location of extraction, harvesting, or recovery and Project site.
3. Credit MR 7: Provide Manufacturer's Forest Stewardship Council chain of custody certificate, issued by certified FSC Body for wood panels supplied for the project. Indicate input credit (Pure or Mixed) on the packing slips & invoices [insert if required].
4. Credit EQ 4.2: Submit manufacturer's product data for paints and coatings. Indicate VOC limits of the product [insert if required].
5. Credit EQ 4.4: For engineered wood products provide documentation that composite wood and agrifiber products contain no added formaldehyde [insert if required].
  1. ANSI A208.1 – 1999, Particleboard
  2. ANSI A208.2 – 2002, Medium Density Fiberboard (MDF) for Interior Applications.

**1.8 ADMINISTRATIVE REQUIREMENTS**

1. Section [01 31 00]: project management and coordination procedures.
2. Sequencing: sequence work to ensure wood acoustic ceiling is not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, ambient temperature and humidity conditions are being maintained at the levels indicated for Project when building is occupied for its intended use and overhead work is completed, tested and approved.
3. Install wood acoustic ceiling s after interior wet work is dry. Heating and cooling systems shall be fully operational and running prior to installation.
4. Maintain uniform temperature of a minimum 70 degrees F and humidity between 25 and 55 percent prior to, during, and after wood acoustic ceiling installation.

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**1.9 SUBMITTALS**

1. Submit each item in this Section according to the Conditions of the Contract and Section [01 33 00]: Submittal Procedures.
2. Product data: Geometrik shall submit manufacturer's product specifications and installation instructions for each acoustical ceiling material required. Geometrik will include recommendations for cleaning and refinishing acoustic wood panels, including precautions against materials and methods which may damage finish and acoustical performance.
3. Shop Drawings: when required, Geometrik shall supply shop drawings showing sizes and location of wood ceiling members. Set of shop drawings should consist of RCP, standard installation details, manufacturer's special installation requirements, including perimeter conditions requiring special attention. The Contractor should verify site conditions with dimensions on shop drawings.
4. Samples: a [12" x 18"] sample for each type of GeoLinear wood ceiling member, showing full range of exposed color and grain variation to be expected in completed work will be submitted by the manufacturer. Sample will be labeled to fully identify wood species and selected finish.

**1.10 DELIVERY, STORAGE AND HANDLING**

1. Delivery and unloading: Coordinate crate sizes, weights, unloading options, and delivery schedule with manufacturer prior to fabrication. Deliver wood ceiling to Project site in original, unopened packages and store them flat and level in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other mistreatment.
2. Climatization: Before installing wood ceiling members, permit them to reach room temperature and stabilized moisture content (a minimum of 72 hours prior to installation) per AWI standards.
3. Handling: handle wood panels carefully to avoid chipping edges or damaging units in any way.

**1.11 EXTRA MATERIALS / WARRANTIES**

1. [Extra or Owners stock] Materials: Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with label clearly describing content.
  1. Wood Strips: Furnish quantity of full size units equal to [2.0] percent of amount installed.
2. Warranties: Provide owner with a one year warranty for materials and workmanship on all installed products.
  1. Manufacturers: All materials supplied by the wood ceiling manufacturer shall be guaranteed against manufacturing defects for one (1) year. Due to differing site conditions, wood stains and coloring can vary with age, and are excluded from this warranty.
  2. Contractor: All work shall be guaranteed for one (1) year from final acceptance of completed work.

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**PART 2 PRODUCTS**

## 2.1 LINEAR WOOD ACOUSTICAL CEILING SYSTEM

1. Standard: Provide manufacturer's standard units of configuration indicated which are prepared for mounting method designated and which comply with those indicated by reference to type, form, pattern, grade, edge detail.
2. Colors, Texture and Patterns: Provide acoustical wood strips to match appearance characteristics as selected by Architect from manufacturer's standard finishes, veneer and pattern available for acoustical wood ceiling strips.

## 2.2 MANUFACTURERS – LINEAR WOOD ACOUSTICAL CEILING SYSTEM

1. Base of design:
  1. **Geometrik Manufacturing Inc.** - 1285 Stevens Road, West Kelowna, BC V1Z 2S9  
Ph. 1-888-306-0024 or 250-769-1500, fax: 250-769-1520, [www.geometrik.com](http://www.geometrik.com)
  2. **Product:** **GeoLinear Acoustical Wood Ceiling System**  
**Model:** [as specified by Architect]
2. [Optional] Other acceptable manufacturers offering functionally equivalent products.  
[ \_\_\_\_\_ ] [Model] [Style] [ \_\_\_\_\_ ]  
[ \_\_\_\_\_ ] [Model] [Style] [ \_\_\_\_\_ ]
3. [Optional] Substitution: Not permitted.

## 2.3 MATERIALS – LINEAR WOOD CEILING STRIPS

1. Wood Specie: [Insert wood specie required & solid wood or wood veneer]
2. Core Substrate: [Req'd if veneer] Industrial grade medium density fiberboard manufactured from pre-consumer recycled wood from sustainably managed forests [optional] with formaldehyde-free adhesive system [optional]; certified Class A [Class 1] flame retardant panel with flame spread less than 25 and smoke development less than 50 when tested in accordance with ASTM E-84 [optional]; FCS® certified [optional]; 48 lbs/cu ft; Medite® FR. [Optional = Particleboard]
3. Plank size: 3/4" th x 3-3/4" wide with 3/4" reveal between blades  
[or 3/4" th x 5-1/4" wide with 3/4" reveal].

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| 4. | Style:             | Continuous   |
| 5. | Fire Rating:       | [Optional = Class A [Class 1] or Class C]  |
| 6. | Finish:            | 20 sheen clear – manufacturer’s standard finish<br>[Optional Opaque or transparent stain]    |
| 7. | Reveal cover:      | Black Fiber Felt Spacer (factory attached)   |
| 8. | End joints:        | Strips to be field joined by means of spline joinery   |
| 9. | Suspension System: | Geometrik supplied 12’ long suspension rails with factory attached clips (main runners only) |

**2.4 SUSPENSION SYSTEM**

1. Suspension grid: use suspension rails supplied by the manufacturer of wood ceiling.
2. Installer shall provide and install standard Metal Cross-tees, Wall Angle or Shadow Moldings of types, structural classifications, and black finishes indicated and that comply with applicable ASTM 635 requirements, seismic codes and ordinances. A # 12 gauge wire hanger shall be installed on 4’ centers along each main runner. All wire hangers are to be attached to an industry standard connecting device meeting recommended loading requirements (i.e., inserts, screw eyes, etc.).

**2.5 ACESSESORIES**

1. All adjacent trims and borders shall be supplied by the manufacturer of wood ceiling. [Insert if applicable]
2. Installation tool: use Geometrik installation tool to secure clips, wood strips, and grid together.
3. Touch-up Paint: Type and color to match acoustic wood panels
4. Acoustic Batt Insulation: Specified in Section [07 21 16] 1 inch thick [Thickness determined by desired NRC rating] supplied and installed by Contractor. [Insert if applicable]

**2.6 FINISH**

1. Shop Finishing: wood strips shall be shop-finished with selected stain and clear, semi-gloss post-catalyzed lacquer as per color selection by architect.
2. Due to nature of real wood (variation in grain, texture and color) the finished product may range from light to dark affecting the look of the panels.

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**PART 3 EXECUTIONS****3.1 PREPARATION**

1. Ceiling Layout: Measure each ceiling area and establish the layout of wood ceiling members and conform to the layout shown on reflected ceiling plans in accordance with wood ceiling manufacturer's approved Shop Drawings.
2. Coordination: The Contractor shall furnish the layout for supports that shall be installed for suspension of ceilings. He shall furnish concrete inserts, steel deck hanger clips, or similar devices for installation, in time to coordinate the work. The contractor shall coordinate the installation of the wood ceiling members with other construction elements that penetrates ceiling; including light fixtures, HVAC equipment, fire-suppression system components, partition assemblies and all perimeter conditions. The position of such elements shall be located and cut in the field.

**3.2 INSTALLATION**

1. General: Comply with manufacturer's instructions and CISCA "Ceiling Systems Handbook".
2. Install wood ceiling members in accordance with manufacturer's installation instructions and in compliance with all local codes and regulations. Install with undamaged edges and fitted accurately to suspension system. Scribe and cut wood members at borders and penetrations to provide a neat, precise fit, as required. Geopanel linear style wood strips with fiber felt spacers shall be installed with felt edge facing the area to be filled with next installed wood strip.
3. Installation of continuous wood strips: installing contractor shall use Geometrik clamping tool to secure clips, wood strips, and grid together.
4. Light fixtures and HVAC penetrations: all mechanical and electrical installations integral to the ceiling must be suspended and supported independently of all linear wood ceiling elements.

**3.3 CLEANING**

1. General: Clean exposed wood surfaces of ceiling members. Comply with manufacturer's instructions for cleaning and touchup of minor finish damage. Remove and replace wood ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

**3.4 INSPECTION**

1. When Geometrik wood ceiling system has been completely installed, the owner and/or his representative shall inspect all finished surfaces of the wood ceiling system to validate that the work has been completed in compliance with these specifications. Any defect in meeting installation specifications shall be corrected by the installing contractor at no additional cost to the owner and/or to Geometrik Manufacturing, Inc.

**END OF SECTION**