

PART I GENERAL**1.1 SECTION INCLUDES**

1. GeoSquare wood [acoustical] ceiling tiles.
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. Ceiling suspension system and components.
2. Sound absorbing black glass fiber blanket 50 kg/m³ density.

1.3 RELATED SECTIONS

1. Drawings and general provisions of Contract including General and Supplementary Conditions.
2. Section [] – LEED Requirements.
3. Section [07 21 16] – Blanket Insulation
4. Section [09 51 10] – Acoustic Tile
5. Section [21 13 00] – Sprinklers: Sprinkler heads in ceiling systems.
6. Section [23 37 00] – Air Outlets and Inlets: Air diffusion devices in ceiling systems
7. Section [26 51 13] – Interior Luminaries: Light fixtures in ceiling systems.
8. 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.

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.
10. AWI (QSI): Architectural Woodwork Quality Standard Illustrated; 2003
11. CISCA: Ceiling Systems Handbook.
12. 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, perforation pattern, edge condition, standard penetrations, mounting hardware with suspension grid;
 2. Sample [10" x 12"] 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 that has completed at least five projects of the scope and quality required by the contract documents for this project and with a record of successful in-service performance, approved by wood ceiling manufacturer.
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 Panels: Obtain each type of Wood Ceiling Panels 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:

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.
2. Credit MR 5.1 & 5.2: List of proposed regionally manufactured materials and regionally extracted, harvested or recovered materials.
 1. Identify each regionally manufactured material, its source, and cost.
 2. Included map or other similar documentation, confirming the following:
 - a. Driving distance between location of manufacture and Project site.
 - b. Driving distance between locations 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.
4. Credit EQ 4.2: Submit manufacturer's product data for paints and coatings. Indicate VOC limits of the product.
5. Credit EQ 4.4: For engineered wood products provide documentation that composite wood and agrifiber products contain no added formaldehyde.
 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 panels are 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 occupied for its intended use and overhead work is completed, tested and approved.
3. Install wood acoustic panels after interior wet work is dry.
4. Maintain uniform temperature of minimum 20 degrees C, and maximum humidity of 55 percent prior to, during, and after wood acoustic panel installation.

1.9 SUBMITTALS

PRODUCT: GEOSQUARE**WOOD CEILING TILES**

1. Submit each item in this Section according to the Conditions of the Contract and Section [01 33 00]: Submittal Procedures.
2. Product data: Submit manufacturer's product specifications and installation instructions for each acoustical ceiling material required. Include manufacturer's 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, manufacturer shall supply shop drawings showing sizes and location of wood ceiling panels. Set of shop drawings should consist of RCP, standard installation details, manufacturer's special installation requirements, including perimeter conditions requiring special attentions. The Contractor should verify site conditions with dimensions on shop drawings.
4. Samples: Submit [10" x 12"] sample for each type of wood acoustical panels, showing full range of exposed veneer variation to be expected in completed work. Label sample to fully identify them.

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 panels 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 mistreatment.
2. Climatization: Before installing wood panels, permit them to reach room temperature and a stabilized moisture content (at least 72 hours) 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 Panels: 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 panel manufacturer shall be guaranteed against manufacturing defects for one (1) year. Because of 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.

PART 2 PRODUCTS**2.1 WOOD CEILING TILES, GENERAL**

1. Standard for Wood Ceiling Tiles: 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 wood ceiling tiles to match appearance characteristics or if not otherwise indicated, as selected by Architect from manufacturer's standard finishes, veneer and pattern available for acoustical wood panels.

2.2 MANUFACTURERS – WOOD CEILING TILES

1. Base of design:
 1. **Geometrik Manufacturing Inc.**
1449 Velocity Street, Kelowna, BC V1V 3C2
Ph. 1-888-306-0024 or 250-769-1500, fax: 250-769-1520, www.geometrik.com
 2. **Product: GeoSquare – Model:** [as specified by Architect]
2. [Optional] Other acceptable manufacturers offering functionally equivalent products.
[_____] [Model] [Style] [_____]
[_____] [Model] [Style] [_____]
2. [Optional] Substitution: Not permitted.

2.3 MATERIALS – WOOD CEILING TILES

1. Wood Veneer: [Insert Wood Veneer, Cut & Match required]
2. Panel size: Standard [insert Geometrik standard sizes required].
3. Panel thickness: 3/4"
4. Core Substrate: 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].

- 5. Perforation: [Insert perforation type if required]
- 6. Fire Rating: [Optional = Class A [Class 1] or Class C]
- 7. Backer: Black Acoustic Non-Woven Fabric [Optional]
- 8. Edge Profile: [Options= Square, Tegular or concealed side groove]
- 12. Finish: 20 sheen clear – manufacturer's standard finish [Optional Opaque or transparent stain]

2.4 SUSPENSION SYSTEM

- 1. Chicago Metiallic Suspension grid: Installer shall provide and install standard Heavy Duty 15/16" suspension T-Grid system using Main Runners, 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 ACCESSORIES

- 1. Matching perimeter trim to be supplied by wood ceiling manufacturer. [Insert if applicable]
- 2. 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]
- 3. Touch-up Paint: Type and colour to match acoustic wood panels.

2.6 FINISH

- 1. Shop Finishing: Panels shall be shop-finished with stain per architect's selection [optional] and clear, semi-gloss varnish (wood veneer) or painted (matte finish) per color selection by architect.
- 2. Due to the 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.

PART 3 EXECUTIONS**3.1 PREPARATION**

1. Ceiling Layout: Measure each ceiling area and establish the layout of wood ceiling panels and conform to the layout shown on reflected ceiling plans in accordance with wood ceiling manufacturer's approved Shop Drawings. Field dimension shall be taken prior to manufacture of wood ceiling panels.
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 ceiling panels with other construction elements that penetrates ceiling; including light fixtures, HVAC equipment, fire-suppression system components, partition assemblies and all perimeter conditions. Positioning of such elements shall be located and cut in the field.

3.2 INSTALLATION

1. Install in compliance with local building code.
2. General: Comply with manufacturer's instructions and CISCA "Ceiling Systems Handbook".
3. Install wood ceiling panels 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 panels at borders and penetrations to provide a neat, precise fit, as required.

3.3 CLEANING

1. General: Clean exposed wood surfaces of ceiling panels. 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.

END OF SECTION