

DESIGN STANDARDS

1. General: This section covers standards for the design, materials selection, and installation of acoustical ceiling systems.
 - 1.1 Select ceiling systems based on durability, value, and performance according to program use of room or area.
 - 1.2 Acoustical ceilings are the preferred ceiling at all interior spaces, except those subject to moisture, wet areas or where gypsum or other ceiling products are required by program; or as otherwise provided by programmatic requirements.
 - 1.3 Colors, other than white, shall be approved by the University's Project Manager. The color of grid shall match color of ceiling.
 - 1.4 The Architect shall specify the system type, size, finish, sound absorption (NRC), STC rating, light reflectance, and fire rating based on the program and code requirements.
 - 1.5 Reflected ceiling drawings shall indicate and coordinate all ceiling elements and penetrations including but not limited to lighting, sensors, sprinkler heads, HVAC accessories.
 - 1.6 Design ceilings so that grids are centered continuous to other adjacent areas where possible. Avoid grids extending along walls within a few inches. Indicate start points for whole tiles on the reflected ceiling plans.
 - 1.7 Avoid use of panel widths less than 12 inches in width.
 - 1.8 The use of 12x12 concealed spline ceiling systems is strongly discouraged due to the difficulty in managing access to equipment, valves, and other items in the plenum above without damaging or soiling the ceiling panels. If the Architect and consultants can eliminate the need for access above; the Architect may present the use of concealed spline acoustic ceiling for the University's Project Manager approval.
 - 1.9 The ceiling tile selection is an important part of achieving desirable room acoustics. Consider the NRC value as part of the project selection criteria.

PRODUCT STANDARDS

1. For purposes of simplifying maintenance, repair, and replacement of the acoustical ceiling systems, the University requires the use of one of the following products:
 - 1.1 Acoustical Panel for General Use: Cirrus #584 by Armstrong; Celotex Softone Cashmere; USG "Eclipse" Panels, 2 ft x 2 ft x 3/4 inch thick with either square or angled tegular edges.
 - 1.2 Acoustical Panel for Kitchen and Food Preparation Areas: Armstrong, Clean Room Mylar Face #1715 Non-Perforated Panels, 2 ft x 2 ft x 3/4 inch thick with square edges or similar by USG or Celotex.
 - 1.3 Acoustical Panel for Gymnasium and Physical Education Areas: Use Armstrong Armatuff #861-861/862 panels, 2 ft x 2 ft x 3/4 inch thick, with square edges; add retention clips; or similar by Celotex or USG.

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- 1.4 Acoustical Panel for Laboratories: Use Armstrong Ceramaguard Medium Texture #601 panels, 2 ft x 2 ft x 5/8 inch thick with square edges; or similar by Celotex or USG.
- 1.5 Do not use Acoustical Panel Ceilings in shower rooms of other high humidity areas.
- 1.6 Acoustical Panel Ceiling System selections other than those listed shall be submitted to the University's Project Manager for approval.
2. Suspension System: Fabricated from hot dipped galvanized steel with white baked enamel finished Aluminum Cap, complying with ASTM C635. Acceptable manufacturers: Prelude by Armstrong; Chicago Metallic, 200 Low Gloss; USG DXLA, 05 finish. Other ceiling suspension systems shall be submitted for approval.
3. The Architect shall require the Contractor to provide the manufacturer's literature including material specifications for ceiling range type and suspension system components, installation directions, samples, and maintenance instructions for each system required for the project.
4. The Architect will work with the University's Project Manager to determine the requirements for attic stock including: Quantity, packaging, parameters for delivery and storage location to be included in the Project Manual.
5. Product Characteristics:
 - 5.1 Surface burning characteristics: Class "A" flame spread 25 or under; UL labeled.
 - 5.2 Antimicrobial Solution: Bio block coating on both faces of panel to inhibit growth of mold and mildew or manufacturer's equivalent treatment as recommended by the architect and approved by Rice's Project Manager.
 - 5.3 Submit laboratory test reports and other data for each product demonstrating compliance with the Project Manual requirements
6. Where the project goals include the selection of "green" or sustainable products, work with the University's Project Manager to identify and select: acoustical ceiling panels that contain recycled content, post consumer and/or post industrial content to meet the project requirements and a ceiling suspension system that includes recycled metal content.

PERFORMANCE STANDARDS

1. Require submission of certified laboratory test reports and other data as required for each acoustical panel and suspension system component required to show compliance with specifications.
2. Require submission for review a minimum of 3 12 inch square samples of each type acoustical panel required and 6 inch long pieces of each suspension system component required. Panel samples shall indicate full range of color and texture that will be the standard of quality in the finished product.
3. The Architect, together with mechanical and electrical engineer, shall provide complete and coordinated reflected ceiling plans, showing all ceiling mounted devices, including, but not limited to, sprinkler heads, diffusers, fire alarm devices, light fixtures, and other items as they occur.

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4. The ceiling installer shall have a minimum of five years experience in projects of the same type and size of installation. Installers that are certified by the manufacturer are preferable.
5. Request that installation of acoustical ceilings be performed only when temperature and humidity conditions approximate the interior conditions that will exist when the building is occupied.
6. Installation of grid suspension system must be in strict accordance with ASTM C 636 and manufacturer's published installation drawings, properly leveled in place to a tolerance of 1/8 inch in 12 feet. The architect shall specify the type of hangers and other installation requirements.
7. General Installation Requirements:
 - 7.1 Increase the size and strength of suspension system to support light fixtures, acoustical units, and related items without deflecting more than 1/360 of the span when tested as a simple beam, ends free, center reading.
 - 7.2 Provide metal edge trim at openings and perimeter.
 - 7.3 Request coordination with mechanical and electrical work being performed in areas receiving acoustical piping, ducts, electrical, and other work that is to be concealed by the ceiling shall be completed, tested, and inspected and the proper ceiling height and level established before ceiling system components are installed.
 - 7.4 Warranty on Acoustical Panel Ceiling: Manufacturer's standard 15-year warranty including:
 - 7.4.1 Dimensional stability.
 - 7.4.2 Resistance to impact, humidity, corrosion, and chemical exposure.
 - 7.4.3 Product will be free from warping and sagging resulting from defects in materials and factory workmanship.

End of Division 9 – Finishes – Acoustic Ceiling Systems