

DIVISION 09 – FINISHES

09512 ACOUSTICAL PANEL CEILINGS

A. Design Considerations

1. Acoustical panel ceilings consist essentially of two main components, the suspension grid and the panel itself. "Concealed-spline" ceiling grids and narrow suspension grid systems are prohibited due to difficulty with removal and replacement of tile and grid for access. Specify exposed grid suspended ceilings systems, including grids, tees and runners not less than 15/16" wide in profile. These ceilings are easily accessed and very quick to install.
2. Acoustical ceiling panel materials vary. Fire resistance, noise coefficient, sag resistance, and light reflectance criteria should all be considered based on the application. Avoid using patterned and multiple tegular beveled panels which tend to cost more to replace when damaged, due to additional labor associated with their edge/joint detail and finish. Whenever possible utilize ceiling panels with a high recycled content and obtain products from manufacturers with an effective recycling program. These panels typically do not cost any more than other panels and work in most applications. Consider the application when selecting panels. Panels with higher recycled content may support mold and mildew growth and some also contain low levels of formaldehyde. High sanitary areas such as labs, clean rooms, kitchens typically utilize panels with a PVC covering for increased durability. This may be an issue for future disposal since the incineration of PVC (polyvinyl chloride) may release furans and dioxins. Metal ceiling tiles or panels are often made of aluminum - recyclable, lightweight, durable and available in a variety of colors, patterns and finishes.

B. Special Documentation Requirements

RESERVED

C. Materials and Methods of Construction

1. Suspension System: Specify installation in accordance with manufacturers' specifications and in accordance with ASTM C635, Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings, and ASTM C636, Standard Practice for Installation of Acoustical Tile and Lay-in Panels.

Ceiling Panel Schedule

Space Type	Recommended Ceiling Panels	Remarks
Classrooms (25 to 30 students) Seminar Rooms, Private Offices, Corridors, Toilets, Storage Rooms, Janitor's Closets, IT Closets, Electrical Closets and Mechanical Rooms	<p>Armstrong School Zone Fine Fissured #466 24"x48" panels, square lay-in edge NRC rating: .55 HumiGuard Plus (Sag resistant) Bio Block 40% recycled content / \$</p> <p>Upgrade: Armstrong Mesa #680 for 2 x2 Armstrong Mesa#683 for 2 x4 NRC rating: .60 HumiGuard Plus BioBlock 55% recycled content / \$</p> <p>Upgrade: Armstrong Ultima #1910 for 2 x2 Armstrong Ultima #1913 for 2x4 Beveled tegular edge NRC rating : .70 HumiGuard Plus BioBlock 80% + recycled content / \$\$</p>	<p>All grid to be Pre-lude 15/16 unless otherwise noted.</p> <p>“Greenest tile”</p>
Libraries, Lecture Halls, Auditoriums Open-plan offices (workstations)	<p>Armstrong Optima #3152 for 2 x2 Armstrong Optima #3153 for 2x4 Square tegular edge NRC Rating: .95 HumiGuard Plus 40% recycled content / \$\$</p>	Acoustics critical factor in this selection.
Open Plan offices and conference rooms (Downgrade option for Libraries, Lecture Halls, Auditoriums)	<p>Armstrong Ultima #1910 for 2 x2 Armstrong Ultima #1913 for 2 x4 Beveled tegular edge NRC rating: .70 HumiGuard Plus BioBlock 80% recycled content / \$\$</p>	Acoustics critical factor in this selection.
Labs	<p>Armstrong Ceramaguard Fine Fissured, perfo- rated #607 for 2 x2 Armstrong Ceramaguard Fine Fissured, perfo- rated #608 for 2 x4 Square lay-in HumiGuard Max BioBlock NRC rating: .55 38% recycled content / \$\$</p>	

Space Type	Recommended Ceiling Panels	Remarks
Kitchens Food Prep Clean Rooms	<p>Armstrong Clean Room VL, Unperforated #868 for 2x2 Armstrong Clean Room VL, Unperforated #870 for 2x4 Square lay-in</p>	

	HumiGuard Plus BioBlock Recycled content from 35 to 63% / \$\$ **Use Prelude 15"/16" Prelude Plus XL 15/16" grid for kitchens **Use Prelude 15"/26" Clean Room grid with this tile for Clean rooms.	
Locker Rooms Showers	Armstrong Ceramaguard Fine Fissured, perfo- rated #607 for 2 x2 Armstrong Ceramaguard Fine Fissured, perfo- rated #608 for 2 x4 Square lay-in HumiGuard Max BioBlock NRC rating: .55 38% recycled content / \$\$ **Use Prelude Plus XL 15"/16" grid with this tile	

09651 RESILIENT FLOOR TILE

A. Design Considerations

- In lieu of resilient material, consider structural surface as finish material in areas where aesthetics and maintainability allow. Avoid the use of fissured, ribbed, or otherwise textured vinyl or rubber composition tile, unless slip resistance is important. Such tiles are very difficult and time consuming to clean. Consider a single content material rather than a composite material for future reuse and recycling. Many conventional flooring products are made with polyvinyl chloride (PVC), which may have adverse impacts on the environment during manufacturing or disposal. Consider the use of linoleum over vinyl tile or sheet goods. Natural linoleum is a durable low-maintenance material. Drawbacks to linoleum include: not produced in the United States and some individuals are sensitive to linoleum due to oxidation of linoleum acid. If available, the A/E shall specify flooring adhesives with either low or no VOC, for high traffic areas, classrooms, lobbies, atriums and corridors.

Resilient tile shall not be used in laboratories. The appropriate flooring materials for laboratory use are seamless epoxy or sheet vinyl with welded seams and integral cove base.

B. Special Documentation Requirements

- Concrete substrates: Specify that concrete substrates shall be prepared in accordance with ASTM F710, *Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring*.

C. **Materials and Methods of Construction**

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09680 CARPETING

A. **Design Considerations**

1. Carpet is used extensively throughout the University, so its selection must be made with its intended use and budget in mind. When selecting carpet look to choose carpet with a diversity of color variations to conceal soiling, and avoid the use of solid colors, which do not hide spills and soiling very well. Look to use very dense loop-pile carpet with a low pile height for heavy-traffic areas. Utilize cut and loop, cut pile or loop pile in medium-traffic areas. Influences in carpet performance include appearance retention, yarn type, pile yarn density, yarn gauge, yarn twist, and pile height. A thicker yarn can be tufted at a wider gauge and receive the same density as a fine yarn with a small gauge. Depending on location broadloom carpet may be preferred over modular carpet and vice versa. Broadloom 12 and 15 foot is versatile in large rooms, with minimal seams and cut into a variety of shapes; modular carpet tile can be easily rearranged when worn down. Modular carpet can also reduce down time during re-installation and the need for movement of furniture.
2. Choosing fiber type. Fibers for carpet vary. Nylon, Olefin and wool are the most common. Nylon 6 and nylon 6,6 fibers are the most durable fibers made today. Nylon fiber has good fade resistance, is resilient, cleans easily, and is resistant to crushing. Many manufacturers are now also recycling nylon. Avoid using nylon fibers that are simply round in cross section. Round fibers magnify imperfections, causing carpet to look worn and dirty. Select fiber with irregular shaped cross section to conceal dirt and imperfections. Also look to choose solution-dyed fiber over yarn dyed fibers. In solution-dyed the color is throughout the fiber, making it more resistant to harsh chemicals and sunlight fading. Polypropylene (Olefin) faced fiber carpets are prohibited. Although inexpensive, this fiber type does not hold up in long term wear. Wool fiber carpet is also prohibited, due to its high cost/ high maintenance.
3. Carpet backing systems vary by individual manufacturer. Many companies offer a selection of primary backing as well as secondary backing materials. These backing materials help provide stability, improve imperviousness to moisture and add resistance to edge raveling. The functional needs for a particular area should be con-

sidered when selecting backing materials. Action-back carpets tend to have the shortest lifespan, are water permeable and, therefore, are prohibited. Woven carpet backing systems tend to have a longer lifespan and resist edge ravel, but are also water permeable. Consider carpet-backing systems that contain recycled material. Many companies offer a secondary backing system that also contains recycled materials. These secondary backing systems also enhance the durability of a carpet as well as add comfort, acoustical and thermal performance. Some are also non-permeable and resist mold and mildew well.

4. Tufted carpet performance is associated with pile density, or the amount of yarn in a given volume of carpet face. For carpet weight, lower pile height and higher pile yarn density will yield the most performance for the money. A carpet’s density is also influenced by the number of tufted rows per inch as well as the size of the yarn in the tuft. The denser the tufts, the more durable the carpet.
 - a. The minimum required pile yarn densities for tufted carpet here at the University are listed below:

Corridors, Lobbies and Entryways*	Minimum pile density 8000
General open office areas	Minimum pile density 7000
Private Offices	Minimum pile density 6000
Conference and Seminar Rooms	Minimum pile density 7000
Library and Reading Rooms	Minimum pile density 8000
Dormitories/ Apartments	Minimum pile density 7000

* The use of carpet should be avoided in these areas. If unavoidable, utilize the minimum density noted.

B. Special Documentation Requirements

1. When a project involves the removal of an existing carpet the A/E shall specify that the existing carpet shall be recycled under the DuPont Reclamation Program, INVISTA Reclamation Center or any other reclamation program approved by the University. In addition the A/E shall specify that the Contractor is to provide certification confirming successful completion of reclamation.

2. A/E shall specify the maximum flame spread rating requirements of carpet, carpet glue, mastic, etc and that all materials shall conform to State of New Jersey Volatile Organic Compound (VOC) environmental regulations.
3. When specifying carpet backing, system must have a minimum 10 year warranty.

C. Materials and Methods of Construction

1. The A/E shall only specify carpet conforming to the Americans with Disabilities Act.
2. The A/E shall specify that all carpet shall be installed in accordance with the Carpet and Rug Institute (CRI-104) Standard for installation of Commercial Carpet, latest edition.

09910 PAINTING

A. Design Considerations

1. Due to required maintenance, and to maintain a uniform appearance, the designer should carefully select paints as well as the finish. When selecting paint consider the type of facility to be painted, material, durability and finish required; as well as overall costs. The quality of paint varies with the type of finish selected. High traffic areas, for example, require a more durable finish, while a small office may not warrant the same finish.
2. Please note that the University does not stock an infinite number of paint colors, and therefore limits the palette of color choices for public and non-public spaces. A list of standard paint colors and finishes for building types and non-public spaces is listed below.
3. The A/E should consider the use of horizontal banding, such as wainscot and vertical breaks when designing a painting scheme. These breaks can help limit the need for extensive repainting and can aid in sectioning-off areas to be painted at different intervals.
4. The A/E shall only specify paints that meet or exceed N.J. State, local and EPA regulations for volatile organic compounds (VOCs).
5. Preferred manufacturers used for paints at the University are Benjamin Moore and Sherwin Williams.

6. Standard colors do not apply to Historically Registered Buildings.

B. Special Documentation Requirements

1. Whenever colors are selected for a project, the A/E shall submit, through the project team leader, a color schedule/color palette for approval by the University Architect. This schedule is to be updated and recorded on as-built documents prior to project close-out and a finished color chart and schedule shall be turned over to the project team leader for record.
2. Public spaces such as entry foyers/ lobbies, conference rooms, dining areas, atriums, gymnasiums, libraries, reading rooms, and other large public assembly rooms can utilize any color, provided the color has been approved by the University through the University Architect.
3. The following selections listed below are the University Standard for Interior Paint colors for all building types that are public, and non-public spaces including offices, corridors, bathrooms, laboratories, classrooms, and lecture halls.

Standard Interior Colors:

Manufacturer:

SW 7004 Snowbound

Sherwin-Williams

SW 6140 Moderate White

Sherwin-Williams

SW 6085 Simplify Beige

Sherwin Williams

SW 1046 Stately White

Sherwin Williams

SW1151 Doric White

Sherwin Williams

BM 2128-70 Lily White

Benjamin Moore

BM Int. RM Linen White

Benjamin Moore

BM Int. RM Bone White

Benjamin Moore

BM Int. RM Decorator's
White

Benjamin Moore

Rutgers University Scarlet Red is Pantone color #186

Interior Paint Finish Recommendations for New and Existing Building Projects:

<u>Building/Space Type</u>	<u>Walls</u>						<u>Ceilings</u>
	<u>Plaster/Veneer Plaster</u>	<u>Taped GWB</u>	<u>Brick/Concrete</u>	<u>CMU</u>	<u>Painted Wood</u>	<u>Stained Wood</u>	
Academic/Admin							
Bathrooms (1)	Semigloss	Semigloss	N/A	Semigloss	Semigloss	Satin	Flat
Classrms/Lecture Rms	Eggshell	Eggshell	Satin or Semi (4)				
Corridors/Halls	Eggshell	Eggshell	Stain or Semi (4)	Semigloss	Semi/Satin	Satin	Flat
Offices	Flat/Semigloss	Eggshell	Stain or Semi (4)	Semigloss	Semi/Satin	Satin	Flat
Public Spaces	Eggshell	Eggshell	Stain or Semi (4)	Semigloss	Semi/Satin	Satin	Flat
Dormitories/Housing							
Bathrooms (1)	Semigloss	Semigloss	N/A	Semigloss	Semigloss	Satin	Satin
Corridors/Halls	Eggshell	Eggshell	Stain or Semi (4)	Semigloss	Semigloss	Satin	Satin
Offices	Flat/Semigloss	Eggshell	Stain or Semi (4)	Semigloss	Semigloss	Satin	Satin
Public Spaces	Eggshell/Semi	Eggshell/ Semi	Stain or Semi (4)	Semigloss	Semigloss	Satin	Satin
Student Rooms	Eggshell	Eggshell	N/A	Semigloss	Semigloss	Satin	Satin

<u>Building/Space Type</u>	<u>Walls</u>						<u>Ceilings</u>
	<u>Plaster/Veneer Plaster</u>	<u>Taped GWB</u>	<u>Brick/Concrete</u>	<u>CMU</u>	<u>Painted Wood</u>	<u>Stained Wood</u>	
<u>Laboratories/ Research Facil.</u>							
Bathrooms (1)	Epoxy/Semi	Epoxy/ Semi	N/A	Epoxy/ Semi	Semi/Satin	Satin	Semi (2)
Classrms/Lecture Rms	Eggshell	Eggshell	Stain or Semi (4)	Epoxy/ Semi	Semi/Satin	Satin	Eggshell/ Semi
Corridors/Halls	Eggshell/Semi	Eggshell/ Semi	Stain or Semi (4)	Epoxy/ Semi	Semi/Satin	Satin	Eggshell
Laboratories (3)	Epoxy/Semi	Epoxy/ Semi	N/A	Epoxy/ Semi	Semi/Satin	Satin	Eggshell
Offices	Eggshell/Semi	Eggshell/ Semi	Stain or Semi (4)	Eggshell/ Semi	Semi/Satin	Satin	Eggshell/ Semi
Public Spaces	Eggshell/Semi	Eggshell/ Semi	Stain or Semi (4)	Eggshell/ Semi	Semi/Satin	Satin	Eggshell/ Semi
<u>Recreational Facilities</u>							
Bathrooms/ Locker Rooms	Epoxy/Semi	Epoxy/ Semi	N/A	Epoxy/ Semi	Semi/Satin	Satin	Eggshell/ Semi
Corridor/Halls	Eggshell/Semi	Eggshell/ Semi	Stain or Semi (4)	Epoxy/ Semi	Semi/Satin	Satin	Eggshell
Offices	Flat/Semigloss	Flat/Semi	Stain or Semi (4)	Epoxy/ Semi	Semigloss	Satin	Eggshell
Public Spaces	Eggshell/Semi	Eggshell/Semi	Stain or Semi (4)	Epoxy/ Semi	Semigloss	Satin	Eggshell

Footnotes:

- (1) Use mildew resistant paint in bathrooms with showers.
- (2) Use when a smooth hard ceiling is present.
- (3) Use latex paints for animal labs that may be affected by volatile paints
- (4) Recommend leaving brick in its natural state unless mismatched or stained.