

CHAPTER V

TECHNICAL DESIGN & PERFORMANCE STANDARDS

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DIVISION 9 – FINISHES

Selection and Procurement

North Carolina's Executive Order #156 on State Government Environmental Sustainability, Reduction of Solid Waste, and Procurement of Environmentally Preferable Products, Section 3.a (signed July 20, 1999) directs all state agencies to seek opportunities to reduce environmental impacts associated with capital improvements through project planning, design, and construction.

The University is dedicated to conserving materials and energy. The Designer shall consider the use of recycled materials "whenever economically practical" in conjunction with State Law SB58, Chapter 256. The Designer shall propose finish products that have recycled content such as floor tile, ceiling tile, paving materials, and carpet. The Designer should consider the recyclability of a material at the end of its life. The Designer should also consider the use of low-volatility non-toxic, organic-content paints, stains and other finishes.

Exterior

The color palette on the exterior of University buildings is derived from the use of local red clay brick and light-colored stone, stucco, or trim. On historic buildings, paint color should match mortar color. The University must approve all exterior building colors. Refer to [Chapter II](#), Section C, "Design Reviews".

Provide top quality exterior paint with maximum life and minimum shrinkage specifications. Acceptable manufacturers include Duron, Benjamin Moore, Pratt and Lambert, Devoe, Pittsburgh, Sherwin-Williams, Glidden or any others approved by the Designer. Only first line premium paints are acceptable.

The following chart indicates the proper paint type for specific exterior surfaces:

New Surfaces

Surface	Type Paint	Application
• Exterior Wood	Exterior Wood Primer	1 coat
• Exterior Wood	Exterior Finish Coat - Oil Base	2 coats
• Exterior Metal	Exterior Metal Primer	1 coat
• Exterior Metal	Exterior Metal Paint-Oil Base	2 coats
• Exterior Stucco	Bondex Waterproof paint	2 coats or equal (Portland Cement Base)
• Exterior Masonry	Bondex Waterproof paint	2 coats or equal

Exterior fixtures and equipment

Items such as lampposts, bicycle racks, railing, bollard, posts, barriers, drinking fountains, street signs, and trash receptacles should be painted the University's standard black or green. The standard green to be used is Coronado Paint Co. Industrial direct-to-Metal Acrylic Gloss #390. Some items are exceptions to this rule. Trash dumpsters for cardboard are to be painted dark blue: Coronado Paint Co. Industrial direct-to-Metal Acrylic Gloss #403. Walkway trash containers are to be Tavern Square Green by the manufacturer Victor Stanley. Bollards, or other items requiring high visibility, are to be painted yellow.

The University may require that exterior equipment such as air compressors, mechanical equipment and the like be painted black and green, or another color appropriate to the situation.

Interior

The University of North Carolina at Chapel Hill does not have any standardized system of interior finishes for its buildings. Instead, the University seeks to guide the Designer in the selection of the type and durability of finishes, dependent upon the room use, and leave the final selection to the Designer, with the approval of the building's users and Facilities Planning.

The University's Project Manager will coordinate the review and approval of interior issues. The University requires a review period for all interior finish selections. The Designer shall incorporate all revisions into the construction documents. In general, custom colors and interior finish materials are discouraged due to the difficulty in replacing them during maintenance and repair. Exceptions to this rule will be considered on an individual project basis.

Walls

The following wall finish materials are acceptable options as described:

- Gypsum wallboard
- Concrete masonry unit
- Brick
- Gypsum plaster
- Wood paneling

All wood paneling should be Class "A" fire-rated

- Wallcovering

Vinyl or fabric wallcoverings are permitted only with the approval of UNC project manager and when minimum performance criteria are met. Wallcoverings must be Class A fire rated, Greenguard Indoor Air Quality Certified for low VOC emissions, mercury and cadmium free, and made with water-based inks. Wallcoverings should also contain alkali-resistant pigments to inhibit fading.

It is very important to note that if any building conditions allow liquid or vapor moisture to accumulate in a wall or wall cavity, vinyl wallcovering can act as a vapor barrier restricting the escape of moisture and increasing the risk of mold growth. In all cases, any source of moisture accumulation should be eliminated before installing any wallsurfacing material. In addition, vinyl wallcoverings should be specified with antimicrobial/mildew resistant properties and micro-perforations for increased permeability.

09900 Painting

General

The University standard wall finish is latex enamel eggshell-finish paint. Paint is required to be applied prior to installing carpet and furnishings. The flame spread ratings of walls and ceilings shall comply with NC Building Code and NFPA 101 – Life Safety Code.

Prepare all surfaces for painting by thoroughly filling, sanding, scraping, brushing, chemical cleaning, etc. following industry accepted standards and manufacturer's recommendations.

The Contractor shall not paint any new or existing windows or doors "shut". All must operate freely after painting is complete. Do not paint fire protection devices; i.e. smoke detectors, sprinkler heads, etc.

Approved Materials

Provide top quality interior paint with maximum life and minimum shrinkage specifications. Acceptable manufacturers include Duron, Benjamin Moore, Pratt and Lambert, Devoe, Pittsburgh, Sherwin-Williams, Glidden or any others approved by the Designer. Only first line premium paints are acceptable.

Specify paints and coatings that do not exceed the VOC and chemical component limits of Green Seal's Standard GS-11 requirements. Specify sealants that do not exceed the VOC limits of South Coast Air Quality Management District Rule #1168 AND that do not exceed Bay Area Air Quality Management District Regulation 8, Rule 51.

See a list of EPA-approved low VOC paints in the appendix of Environmentally Preferable Paints: Minimize Harm, Maximize Savings on the web at http://www.eartheasy.com/live_nontoxic_paints.htm; http://www.treehugger.com/files/2005/10/affordable_low.php; <http://www.delta-institute.org/publications/paints.pdf>; http://www.greenexhibits.org/build/alt_4.shtml. For a list of zero VOC paint manufacturers, see the South Coast Air Quality Management District's list on the web at <http://www.aqmd.gov/prdas/brochures/paintguide.html>.

The following chart indicates the proper paint type for specific interior surfaces:

New Surfaces

Surface	Type Paint	Application
Interior Masonry	Latex Masonry Block Filler Interior Paint, Eggshell Alkyd Enamel, or Latex Semi-gloss Enamel	1 coat (Block) 2 coats
Interior concrete	Latex Primer-Sealer Interior Paint, Eggshell Alkyd Enamel, or Latex Semi- gloss Enamel	1 coat
Gyp-Bd./Plaster (Latex Eggshell enamel)	Latex Primer-Sealer, Interior Latex Eggshell Enamel	1 coat 2 coats
Gyp-Bd./Plaster (Alkyd Eggshell enamel)	Enamel Undercoat Alkyd Eggshell Enamel	1 coat 2 coats
Gyp-Bd./Plaster (Latex Semi-gloss enamel)	Latex Primer-Sealer, Interior Latex Semi-gloss Enamel	1 coat 2 coats
Interior Wood	Primer-Sealer Interior Paint, Semi-gloss Alkyd Enamel (*)	1 coat 2 coats
Interior Metal	Metal Primer (*) Alkyd Gloss or Semi-gloss Enamel	1 coat 2 coats

(*) Appropriate for surface (galvanized, etc.)

Existing Surfaces

On previously painted surfaces which are undisturbed by patching or removals: provide 2 coats of finish paint as specified in "3.0 - New Surfaces". Thoroughly prepare surfaces.

On previously painted surfaces which require patching: provide 1 coat primer and 2 coats finish paint as specified in "3.0 - New Surfaces".

Epoxy Paint

In areas of extremely high traffic or potential abuse, application of an epoxy paint, (similar and equal to Tnemec, Pittsburg, Duron), one part epoxy, applied over a prime coat of suggested proportions is recommended. Washrooms not scheduled for wall tile should receive epoxy coating.

Painting Elevator Equipment & Equipment Rooms

Elevator equipment room floors shall be acid-etched and finished with one (1) coat thinned 50/50 and then one (1) unthinned coat of gray porch and synthetic enamel. Seal walls or primed and painted with two (2) coats of light finish alkyd semi-gloss enamel.

Paint the hoistway and the elevator pit equipment with one coat of primer and two coats of alkyd resin, semi-gloss or gloss finish coat.

09300 Floors

General

Specify flooring with low life-cycle cost. Consider safety, durability, ease of maintenance and future repairs/replacement, housekeeping requirements, and chemical treatments when making selection. Specify adhesives and sealants with a VOC content less than the South Coast Air Quality Management District Rule #1168 limit. Specify flooring that meets ADA requirements for slip resistance. Painted or rough brick floors are not permitted; Acceptable floor finishes are as described below. Other flooring products which meet minimum performance requirements may be used with the approval of UNC Project Manager.

Concrete Floors

Concrete floors shall be level, without trowel marks, dirt, or rust stains. Finish floors with penetrating seal and hardener. Concrete floors not covered with a finished floor shall receive one smooth coat of membrane seal.

Terrazzo

Housekeeping Services requests that lobby and hallway floors not be made of black or dark colored epoxy terrazzo due to maintenance difficulties.

Ceramic Tile

Use ceramic tile on shower floor. Use ceramic tile or terrazzo on restroom floors. Custom-colored ceramic tile is not permitted. All ceramic tile floors shall have a ceramic tile base with an acid-resistant grout. White colored grout should not be used; darker grout colors are preferred. Furnish extra boxes of tile for future maintenance (not less than 2% for each type, size and color installed).

Quarry Tile

Furnish extra boxes of tile for future maintenance (not less than 2% for each type, size and color installed). Custom-colored tile is not permitted.

Sheet Vinyl or Linoleum Flooring

Specify commercial grade sheet vinyl or linoleum flooring of 2.0mm minimum gauge with pattern and colors which extend through the wear layer. Use acid-resistant product with integral base in laboratory and health care areas. Use heat welded seams and integral cove base only when the specific room use and criteria warrant it. Acceptable manufacturers and products include: Armstrong Classic Corlon or Medintech, Mannington Inspired Fields or Fine Fields, and Tarkett Coordinates. Acceptable linoleum flooring manufacturers and products include: Armstrong Marmorette and Forbo Real. All color selections shall be from a manufacturer's standard palette.

Install the sheet vinyl or linoleum over a properly prepared surface. Fill all cracks, minor holes and imperfections prior to installation. The subsurface floor must be free of surface coatings such as paint, varnish, wax, oil or grease. Apply an initial two (2) coats of commercial floor polish immediately after installation.

Vinyl Composition Tile

Specify all vinyl or vinyl composition 'through pattern' vinyl chip construction tile of 1/8" gauge. VCT should be specified for all housekeeping closets. Specify tiles with the highest practical post-consumer, or secondary post-industrial, recycled content. Tiles must be compatible with the use of high-speed scrubbers. Acceptable manufacturers and products include: Armstrong "Imperial Excelon"; Mannington, "Essentials"; and Tarkett, "Classics". All color selections shall be from a manufacturer's standard palette.

Upon installation, strip resilient floor tile of the manufacturer's protective seal. Properly apply one coat of floor sealer - undercoat (water emulsion type acrylic) and two thin coats of floor finish (metal complex, water emulsion, acrylic, synthetic polymer) to the tile surface. Sealer and finish products are listed in State Contract No. 644.

Hardwood Flooring

Where budgets allow, specify 3/8" thick hardwood flooring with 3-ply engineered construction. Specify products with an acrylic impregnated wear layer for better indentation resistance and a low gloss finish for easy maintenance. Hardwood flooring may come in plank or square modules. Install with glue down method.

Floor Mats

Provide recessed, lattice-type floor walk-off mats inside every building entrance. Carpet rather than metal inserts are preferred. These mats shall be removable for cleaning. Surface mats, including coco-mats, are not permitted.

Carpet

All carpet is part of the construction contract and is specified by the Designer. The Designer should minimize the number of carpet types and colors, and should consider attic stock, maintenance and replacement.

Encourage carpet tiles with random designs to minimize waste. Specify that carpets, backing, and adhesives should conform to VOC standards developed in EPA protocols for RTP campus. Refer to commercial interiors performance specifications developed by the US Green Building Council. Specify carpet that meets or exceeds the requirements of the Carpet and Rug Institute's Green Label Indoor Air Quality Test Program.

Specify carpet with high post-consumer, or secondary post-industrial, recycled content.

Only contract, commercial-grade carpet is permitted. Cut pile broadloom carpet is permitted in special light traffic areas only. Solid color cut pile is not permitted. Custom colors are discouraged. Use of resilient cove base, rolled goods without preformed corners is preferred in carpet areas. In special areas, with the approval of UNC Project Manager, carpet or wood base may be specified. Where wheelchairs or cart traffic is anticipated, dense, loop pile carpet should be used. Broadloom carpet must be installed with a direct glue-down installation. Carpet padding is permitted only on a case-by-case basis for specialty areas. Five percent attic stock of the same dye lot is required for each carpet types specified.

Use the following criteria for broadloom carpet selection:

- Multi-color and patterned loop pile carpets.
- Static generation of 3.0 KV or less.
- Pile weight: 28 oz. per square yard or greater.
- Solution dyed, anti-microbial fibers preferred.
- Select from manufacturers standard colors and patterns.
- Synthetic primary and secondary backing. Upgraded backings providing cushioning and/or moisture protection can be used as appropriate for specific settings with the approval of UNC Project Manager.
- Brand name fibers with fourth generation nylons preferred.
- Deliver no less than 5 percent attic stock in matching dye lot for each type and color of carpet installed.

The Designer may consider carpet tiles with a hard composition backing, but not containing PVC, for offices, lounges and corridors where floor access is desirable and for ease of repair. Consider specifying a random pattern to minimize waste. A releasable glue is required. Do not specify carpet tiles for some unsupervised heavy student use areas and student residence halls. Specify no less than 5 percent attic stock of carpet tile to provide replacements and repairs for all carpet types.

Cover all newly carpeted areas, upon approval of installation from the Designer, with plastic or brown paper to protect the carpet from construction debris.

Resilient Base and Accessories

Rubber cove base, 1/8 inch thick x 4 inch high, is the standard throughout regardless of carpet or resilient flooring. Use rolled goods, only, without preformed corners. Where existing conditions or special areas occur, exceptions are allowed. Acceptable manufactures include: Flexco, Roppe, and Burke, or as approved by Designer.

Address all transitions between flooring materials, especially carpet to resilient flooring, with either detailed conditions, thresholds or resilient nosing accessories. All transition elements must meet ADA requirements for wheeled traffic.

09510 Acoustical Ceilings

Ceilings

The following ceiling materials are acceptable options as described:

- Gypsum wallboard
- Acoustical systems

Acoustical ceilings with an exposed grid, lay-in system are preferred. In areas where exposed grid is objectionable, use a completely accessible concealed suspension system. Concealed grid systems such as tee and spline systems which are not completely accessible are not acceptable. Acoustical tiles shall be composed of non-combustible materials. Specify "Fire Rated" materials only when a fire rated ceiling system is required for fire protection to structural components such as bar joists and structural steel. Lay-in type ceilings with hold-down clips are not acceptable as fire rated ceilings because of the failure of workmen to reinstall the clips after working above the ceiling. The flame spread ratings of ceilings shall comply with NC Building Code and NFPA 101 – Life Safety Code.

24" x 24" ceiling tile with fissured design is preferred. All selections shall be from a manufacturer's standard palette.

Specify ceiling tiles with a high light reflectance value.

Furnish extra boxes of ceiling tile for future maintenance (not less than 5% for each type and size installed).

Acoustical tiles should not be painted or the acoustical properties will be compromised.



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