
Note to the Designer/Architect/Engineer: These Specifications are basic minimum criteria to be met in preparing the final project specifications for this section, which is the responsibility of the Designer

York University Building Standards

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1.0 GENERAL

1.1 Scope of Work

- .1 This York University Building Standard includes and covers:
 - .1 General design principles and attributes for the deployment of flooring for laboratory applications

1.2 General Design Attributes and Design Guideline Principles

- 1. Flooring for wet chemical laboratories must take into consideration the immediate planned and possible future use of the laboratory. Generally, flooring for laboratories where chemicals, and other corrosive or otherwise hazardous substances including biological, or radiological agents are used, handled or stored must be chemically resistant
- 2. This wet laboratory flooring specification represents a minimum requirements, more stringent requirements may be necessary, depending on the specific function or contaminants generated in the laboratories
- 3. Allowances from this minimum laboratory flooring specifications may be permitted for specific remodeling projects only when approved by CSBO and York University's Health, Safety and Employee Well-being Department and shall be handled on a case by case basis

1.3 Sustainable Design Requirements

- 1. The use of sustainable products for flooring applications in laboratories as an alternative, shall only be considered if the proposed flooring meets or exceeds the technical characteristics required for the intended use

1.4 Submittals

- 1.4.1 Product Data Sheets
- 1.4.2 MSDS data sheets

- 1.4.3 Manufacturers installation instructions
- 1.4.5 Sample, to include base upturn: color samples and selection
- 1.4.6 Manufacturers' or independent laboratory floor test information
- 1.4.7 Maintenance data and instructions

1.5 Related York University Standards

- 1.5.1 other specifications within Division 09 Finishes
- 1.5.2 Laboratory Design Guidelines, York University, March 2013 Department of Occupational Health and Safety

1.6 Performance Standards References

- 1.6.1 Design Guide for Nuclear Substance Laboratories and Nuclear Medicine Rooms
- 1.6.2 Canadian Biosafety Standards and Guidelines

1.7 Warranty (Standard Warranty and Extended Warranty)

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1.8 Quality Control

- 1.8.1 Installation of flooring must conform strictly to the manufacturer's written installation instructions, including preparation of substrate
- 1.8.2 Flooring installer must be a licensed flooring applicator specifically for the flooring selected for the project

2.0 PRODUCTS

21 General Performance Requirement:

- 2.1.1 Laboratory floors shall be resistant to acids, alkalis, and disinfectants normally expected to be used and to be impervious to water and easily cleaned
- 2.1.2 Floors shall be smooth but also slip resistant, floor cleaning and maintenance shall be taken into consideration in the selection of flooring
- 2.1.3 Floor finish shall allow for dry/wet/flat mopping systems such as floor machine cleaning applications

2.2 Laboratories using Radioisotopes and/or Risk Group 2 Biologicals

- 2.2.1 Laboratory floors must either be solid slab concrete, or be covered with a smooth non-porous, seamless sheet that is resistant to a wide range of chemicals
- 2.2.2 Where solid slab concrete flooring is selected, concrete must be chemically (epoxy) sealed throughout
- 2.2.3 Tiles, wooden planks, and other similar flooring are not acceptable as laboratory flooring because liquids can seep through the small gaps in flooring, which would trap radioactives and/or biologicals that can't be decontaminated.

3.0 EXECUTION

- 3.1 General Requirements
 - 3.1.1 Any floor openings must be sealed watertight and free of cracks
 - 3.1.2 Floor drains shall only be installed based on demonstrated engineering need, i.e., in conjunction with the installation of an overhead emergency shower and following consultation with the end users and CSBO project representative
 - 3.1.3 Where floor drains are necessary, these must be outfitted with a trap seal primer to prevent the escape of sewer gas
 - 3.1.4 No open floor drains to be located within the containment zones
 - 3.1.5 No access hatches (or anything that breaks the sealed floor) to be located in floors within containment area
 - 3.1.6 Floors in storage areas (within or as part of laboratories) for corrosive liquids shall be of liquid-tight construction
 - 3.1.7 Laboratory flooring in chemical use areas and high hazard areas must be chemically resistant and to laboratory specifications
 - 3.1.8 Flexible flooring shall be installed throughout the laboratory to accommodate flexible laboratory conditions and room modifications
 - 3.1.9 All floor shall be finished as part of room commissioning such that no further chemical applications or refinishing (such as wax or floor sealants) by the University is required post initial floor installation
 - 3.1.10 All floor finishes on laboratory traffic routes shall be to laboratory specifications
 - 3.1.11 Waxed and seam sealed vinyl floor tiles are acceptable as flooring types in low hazard areas

- 3.2 Laboratories using Radioisotopes and/or Risk Group 2 Biologicals
 - 3.2.1 Laboratory flooring in radioisotope use areas and level 2 biological containment facilities must be chemically resistant and one piece and to laboratory specifications
 - 3.2.2 Where solid slab epoxy treated flooring is selected, this flooring selection must be demonstrated to perform equally or better than the one piece welded vinyl flooring
 - 3.2.3 Where sheet covering laboratory floors is selected, floors must have a flashed cove along all walls and any permanently placed furnishings
 - 3.2.4 A one-piece floor covering can be achieved by using glue, or heat welded vinyl or special purpose rubber flooring. Where possible minimize welded seems Other flooring types may be considered if these pose present no seams, cracks or other types of opening where spilled radioactives/biologicals may seep through and accumulate
 - 3.2.5 Flushed covings abouting all walls (sit-on coved skirting is not acceptable) and furnishings shall be a minimum of 10 cm (4 inch) above floor height. Covs shall be gently rounded

- 3.3 Alternate Flooring Requirements
 - 3.3.1 Alternative flooring material or protection to laboratory flooring to be provided where dispensing of liquid nitrogen may take place (a stainless steel plate, or floor protector mats manufactured of custom-blended chemical-resistant, high impact thermoplastic, or other similar material)
 - 3.3.2 If required, a conductive tile shall be set in approved conductive adhesive and provided with an appropriate grounding strip for connection to an external ground
 - 3.3.3 Ground connection to an external ground shall be indicated Conductive flooring shall be provided with a conductive cove base
 - 3.3.4 Selected laboratory flooring shall conform to York University's established floor cleaning processes.
 - 3.3.5 Installer shall provide documentation for floor cleaning and maintenance to York University's Custodial Services

- 3.4 Coordination
 - 3.4.1 Coordinate the selection of the laboratory flooring with end users, the CSBO project representative, Health, Safety and Employee Well-Being, HR, CSBO Maintenance, and CSBO Custodial Services

End of Section