
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

1.1 .1 This York University Building Standard includes and covers:

- .1 General design principles and attributes for the deployment of laboratory casework
- .2 Casework for laboratories designated for biohazard containment level:
 - .1 Generally, laboratory case work should be procured and installed to meet the requirements of Biohazard Containment Level 2 as a minimum

1.1.2 The decision to procure and install specific laboratory casework for new or renovation projects is site specific.

1.1.3 Where project parameters permit, laboratories should be designed to the highest most stringent requirements, to allow for future flexibility of use

1.2 General Design Attributes and Guideline Principles

1.2.1 Design features and materials selected for the construction of laboratories should be durable, smooth, and easily cleanable, provide ease of maintenance and minimize pest access, and contribute to the creation of a comfortable, productive, and safe work environment.

1.2.2 Materials for laboratory finishes should be as resistant as possible to the corrosive chemical activity of disinfectants and other chemicals used in the laboratory.

1.2.3 Laboratory casework design shall be flexible, allowing for adaptable workplace environments, and changes in laboratory procedures. Casework design flexibility shall permit multiple configurations as different laboratory needs and procedures change over time.

1.2.4 Flexibility in casework can be achieved by incorporating steel framework, suspended systems, movable under bench units that can be on castors, or semi-mobile.

1.3 Sustainable Design Requirements

1.3.1 Avoid adhesives, preservatives, hardeners and synthesizing agents and finish coatings that contain formaldehyde and high Volatile Organic Compounds (VOC) content. Low volatile/off gassing (or zero volatile off gassing) materials must be used

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 of casework materials including color samples and selection
- 1.4.6 Maintenance data and instructions
- 1.4.7 Shop drawings
- 1.4.8 Samples of casework materials proposed

1.5 Related York University Standards

- 1.5.1 Division 22 45 13 & 16 Emergency Showers and Eye Wash Stations
- 1.5.2 Division 23 38 16 Fume hoods
- 1.5.3 YU Laboratory Design Guideline (2013)
- 1.5.4 Division 12 56 00 Institutional Furniture
- 1.5.5 Division 09 62 00 Specialty Flooring – Laboratory Flooring (DRAFT)

1.6 Performance Standards References

- 1.6.1 Laboratory Bio-Safety Guidelines, Laboratory Centre for Disease Control, Health Protection Branch, Health Canada
- 1.6.2 Canadian Nuclear Safety Commission Standard R-52, Design Guidelines for basic and intermediate level radioisotope laboratories.

1.7 Warranty (Standard Warranty and Extended Warranty)

- 1.7.1 Two (2) year manufacturer's warranty to include replacing and refinishing due to defects or faulty workmanship

1.8 Quality Control

1.8.1 Casework proposed for the project must be reviewed and approved by a certified engineer engaged by the Casework manufacturer, to seal shop drawings and carry out site reviews.

2.0 PRODUCTS

2.1 General Performance Requirement

2.1.1 Select a casework manufacturer that specializes in the manufacture and installation of Laboratory Casework and fittings of the type required for the project.

2.1.2 Casework to be pre-fabricated and factory finished system

2.1.3 Work surfaces must be chemical resistant, non-porous, smooth, and readily cleanable. Transitions from standing to sitting height benches shall have surface transition for continuous chemical resistant surfaces for wet labs

2.1.4 Casework tops to be continuous monolithic construction with no open seams, with integrated backsplash, minimize all joints and seals

2.1.5 All counter and casework edges must be rounded (no sharp edges)

2.1.6 Back and side splashes shall be provided along the perimeter of the laboratory benches

2.1.7 Filler panels shall be provided at all inside corners to allow for smooth, full open door and drawer operation

2.1.8 Work surfaces, including computer areas, should incorporate ergonomic features, such as adjustability, task and day-lighting and equipment layout

2.1.9 Work surfaces that need to hold monitors and computers for data entry must be separated from laboratory work areas where hazardous materials are used. Specifically, fume-hoods openings shall not be located opposite desk-type work areas

2.1.10 Bench work areas should have knee space to allow room for chairs near fixed instruments, equipment or for procedures requiring prolonged operation

2.1.11 Cup sinks on work surface tops shall be installed only after the determination of specific research need based on consultation among the end user and CSBO project representative and Occupational Health and Safety. If approved, a lip must be installed around the basin perimeter to

prevent inadvertent release of spilled material into the drain. Cup sinks shall be outfitted with a trap seal primer to prevent the escape of sewer gas

2.1.12 Penetrations for electrical, information technology, plumbing and other considerations shall be completely and permanently sealed

2.1.13 Where worktops abut a wall, the worktop shall be coved or have a backsplash against the wall.

2.1.14 Casework shall incorporate a sink for hand washing. The sink drain shall be connected either to a retention tank or building plumbing depending on the Biohazard Level to be achieved by the laboratory

2.1.15 Bench work area shall have knee space to allow room for chairs near fixed instruments, equipment or for procedures requiring prolonged operations.

2.2 Specific Performance Requirements

2.2.1 Acceptable worktop materials include, but are not limited to:

1. Solid cast epoxy resin
2. Stainless steel
3. Resin-impregnated natural stone
4. Specifically engineered laboratory grade plastic laminate
5. Phenolic or polypropylene
6. Other materials to be reviewed by user group and to address site specific requirements and conditions

2.2.2 Unacceptable worktop materials, include at least:

1. Wood is not an acceptable material for laboratory casework, worktops, casework trim, wood doors and door frames, and any work surfaces within the laboratory
2. Fiberglass (glass fiber reinforced epoxy resin) is not an acceptable material for laboratory work surfaces or casework

2.2.3 Finishes

1. Select finishes to suit site conditions and requirements, as a minimum laboratory casework finishes shall be resistant to:
 - a. Chemicals including acids, alkalis, solvents and reagents
 - b. Heat
 - c. Moisture and humidity
 - d. Impact
 - e. Radioisotope chemistry

3.0 EXECUTION

1.1 Coordination

- 1.1.1 Coordinate the selection of the laboratory casework with end users, the CSBO project representative, Health, Safety and Employee Well-Being, HR, CSBO Maintenance, and CSBO Custodial Services

End of Section