



Environmental Protection Agency

Laboratory Construction and Remodeling Requirements

Plans for any type of laboratory construction or remodeling must be submitted to the Laboratory Certification Section for review and approval. Laboratory plan approval is covered under rule 3745-89-03 of the Ohio Administrative Code.

All items listed below may not be applicable to a particular laboratory. If you have questions or need assistance, contact the Laboratory Certification Section. Laboratories are encouraged to contact the Laboratory Certification Section staff early in the planning stages for construction or remodeling of a laboratory.

1. Laboratory Space

- The door(s) entering the laboratory area must be equipped with a locking system keyed separately from the other doors in the building.
- The door(s) entering the laboratory must be equipped with a clear glass pane large enough to allow forced entry in cases of emergency.
- The laboratory must be equipped with heating and air conditioning capable of maintaining an ambient temperature of between 65° and 80°F.
- Electrical outlets must be provided appropriately along the work benches.
- Acid and alkaline resistant sinks are required.
- Stone balance tables or stone balance slabs must be provided for all analytical balances.
- The laboratory must not be constructed or located as to allow thoroughfare, nor have non-emergency doors directly to the outside of building.
- Emergency exit doors must be equipped with an audible alarm and breaker bar.
- The laboratory area must be isolated from all areas of potential contamination and not allow direct entry into bathrooms or shower areas.

- Physical isolation of a microbiological section of the laboratory from chemical analytical sections is not mandatory, with the exception of laboratories conducting either organic or viral analysis, in which case isolation of the areas is required.
- All laboratory facilities must be constructed as to not be adversely affected by vibration or dust.
- Laboratories must not be constructed with windows intended for ventilation purposes.
- Adequate floor or wall type storage cabinets must be provided for glassware and non-corrosive type reagents

2. Bench Space

- An appropriate amount of work bench space must be provided per certified method for each chemical analytical group.
- A minimum of three feet per certified method is required for microbiological testing.

3. Equipment

- A list of all analytical equipment to be used for drinking water analyses must be submitted to the Laboratory Certification Section. The list must include manufacturer and model number so each piece of equipment can be evaluated.
- If a dish washing machine is to be used for glassware, it must be installed to provide a final distilled or deionized water rinse.
- Exhaust hoods used for acid digestions must be corrosion resistant. If an exhaust hood is to be used in conjunction with solvents, it must be equipped with explosion-proof motors and switches and must be labeled as such.
- All refrigerator systems to be used for storage of solvents must be suitable for flammable materials storage.
- Commercial gas and electric cooking stoves cannot be used in laboratories as substitutes for drying ovens or for other heating purposes.
- If continuous monitors for turbidity, pH or chlorine are to be installed, bench models are required for calibrations and reference samples.

- All bench tops and shelving for corrosion storage cabinets must be of alkaline and acid-resistant construction.
- A safety shower and/or emergency eye wash is to be provided and equipped to provide tempered water in the 65° to 80°F range for a minimum of 15 minutes.
- Distilled or deionized water is required for microbiological and chemical laboratories. If a still is provided, it can be mounted on the wall above the work bench area. Adequate work bench area must be provided for either a still or purchased water, ensuring availability of additional work bench area necessary to perform certified methods.
- The laboratory must be equipped with piped hot and cold water.
- Separate full size or under the counter refrigerators must be provided when non-compatible samples and/or standards are stored in the same laboratory space.
- In a microbiological laboratory, a horizontal steam operated autoclave must be provided; it must be vented to the outside of the building or be equipped with a condenser to allow steam discharge to enter the sanitary sewer