

COMPLIANCE CHECKLIST

IP25: Laboratory Services

The following checklist is intended to be used in the plan review applications for health care facilities submitted to the Massachusetts Department of Public Health. This checklist summarizes and references the applicable requirements from the Licensure Regulations and the 2014 Edition of the FGI Guidelines for Design and Construction of Hospitals and Outpatient Facilities. Applicants must verify compliance of the plans submitted to the Department with all referenced requirements from the Licensure Regulations and FGI Guidelines when completing this Checklist. A separate Checklist must be completed for each nursing unit, hospital or clinic department, or clinical suite.

Other jurisdictions, regulations and codes may have additional requirements which are not included in this checklist, such as:

- NFPA 101 Life Safety Code (2000) and applicable related standards contained in the appendices of the Code
- State Building Code (780 CMR)
- Joint Commission on the Accreditation of Health Care Organizations
- CDC Guidelines for Preventing the Transmission of Mycobacterium Tuberculosis in Health Care Facilities
- USP 797
- Accessibility Guidelines of the Americans with Disabilities Act (ADA)
- Architectural Access Board Regulations (521 CMR)
- Local Authorities having jurisdiction.

Instructions:

1. All requirement lines must be completed according to the following instructions and included in the plan submissions for Self-Certification Process or Part II of the Abbreviated Review Process.
2. This checklist must be completed by the project architect or engineer based on the design actually reflected in the plans at the time of completion of the checklist.
3. Each requirement line (___) of this Checklist must be completed exclusively with one of the following symbols, unless otherwise directed in the checklist. If a functional space is not affected by a renovation project, the symbol "E" may be indicated on the requirement line (___) before the name of the functional space (associated requirements on indented lines below that name, or associated MEP requirements do not have to be completed in this case). If more than one functional space serves a given required function (e.g. patient room or exam room), that clarification should be provided in the Project Narrative, and the requirement lines are understood to only address the functional spaces that are involved in the project.

X = Requirement is met, for new space, for renovated space, or for existing direct support space for an expanded service.

= Check box under section titles or individual requirements lines for optional services or functions that are not included in the project area.

E = Requirement relative to an existing suite or area that has been *licensed* for its designated function, is *not affected* by the construction project and *does not pertain to a required direct support space* for the specific service affected by the project.

W = Waiver requested for specific section of the Regulations or FGI Guidelines, where hardship in meeting requirement can be demonstrated (a Physical Plant Waiver Form must be completed for each waiver request).

4. All room functions marked with "X" must be shown on the plans with the same name labels as in this checklist.
5. Mechanical, electrical & plumbing requirements are only partially mentioned in this checklist. The relevant section of the FGI Guidelines must be used for project compliance with all MEP requirements and for waiver references.
6. Oxygen, vacuum, medical air, and waste anesthesia gas disposal outlets (if required) are identified respectively by the abbreviations "OX", "VAC", "MA", & "WAGD".
7. Requirements referenced with "FI" result from formal interpretations from the FGI Interpretations Task Group.
8. The location requirements including asterisks (*) refer to the definitions of the Glossary in the beginning section of the FGI Guidelines.

Facility Name:

DoN Project Number: (if applicable)

Facility Address:

Nursing Unit Bed Complements:

Current = Proposed =

Satellite Name: (if applicable)

Building/Floor Location:

Satellite Address: (if applicable)

Submission Dates:

Initial Date:

Revision Date:

Project Description:

Architectural Requirements

Building Systems Requirements

2.1-4.1 **LABORATORY SERVICES**

2.1-4.1.1.2 **EQUIPMENT**

- ___ Type & location of all special laboratory equipment identified in equipment plan
 - ___ includes required connections to power, water, ventilation systems & other building systems

2.1-4.1.2 **LABORATORY WORK AREAS**

- 2.1-4.1.2.1 ___ Laboratory workstations
- (1) ___ space to accommodate equipment used
 - ___ laboratory work counter
 - ___ sink

- 2.1-4.1.2.2 Handwashing Station:
- (1) ___ one workstation
 - ___ handwashing station at workstation**or**

(2) ___ more than one workstation

 - ___ handwashing station within 25'-0" of all testing & specimen-handling areas

- (3) ___ enclosed room where bio-hazardous specimens and/or hazardous chemicals are handled
 - check if not included in project
 - ___ handwashing station

- ___ General laboratory
 - check if not included in project

- ___ Bacteriology laboratory
 - check if not included in project

- ___ Biochemistry laboratory
 - check if not included in project

- ___ Cytology laboratory
 - check if not included in project

- Ventilation:
- ___ Min. 6 air changes per hour
 - ___ Negative pressure
 - ___ Exhaust hood(s)
 - check if not included in project
 - ___ Min. 6 air changes per hour
 - ___ Negative pressure
 - ___ Exhaust ventilation
 - ___ Exhaust hood(s)
 - check if not included in project
 - ___ Min. 6 air changes per hour
 - ___ Negative pressure
 - ___ Exhaust ventilation
 - ___ Exhaust hood(s)
 - check if not included in project
 - ___ Min. 6 air changes per hour
 - ___ Negative pressure
 - ___ Exhaust ventilation
 - ___ Exhaust hood(s)
 - check if not included in project

Table 7.1

Architectural Requirements

___ Glasswashing laboratory area
 check if not included in project

___ Histology laboratory
 check if not included in project

___ Microbiology laboratory
 check if not included in project

___ Nuclear medicine laboratory
 check if not included in project

___ Pathology laboratory
 check if not included in project

___ Serology laboratory
 check if not included in project

___ Sterilizing laboratory area
 check if not included in project

___ Media transfer laboratory
 check if not included in project

2.1-4.1.2.3

Refrigerated Blood Storage:
 check if not included in project

(1) ___ equipped with temperature-monitoring
 & alarm signals

Building Systems Requirements

___ Min. 10 air changes per hour
 ___ Negative pressure
 ___ Exhaust ventilation

___ Min. 6 air changes per hour
 ___ Negative pressure
 ___ Exhaust ventilation
 ___ Exhaust hood(s)
 check if not included in project

___ Min. 6 air changes per hour
 ___ Negative pressure
 ___ Exhaust ventilation
 ___ Exhaust hood(s)
 check if not included in project

___ Min. 6 air changes per hour
 ___ Negative pressure
 ___ Exhaust ventilation
 ___ Exhaust hood(s)
 check if not included in project

___ Min. 6 air changes per hour
 ___ Negative pressure
 ___ Exhaust ventilation
 ___ Exhaust hood(s)
 check if not included in project

___ Min. 6 air changes per hour
 ___ Negative pressure
 ___ Exhaust ventilation
 ___ Exhaust hood(s)
 check if not included in project

___ Min. 10 air changes per hour
 ___ Negative pressure
 ___ Exhaust ventilation

___ Min. 4 air changes per hour
 ___ Positive pressure
 ___ Exhaust hood(s)
 check if not included in project

Architectural Requirements**Building Systems Requirements**

- 2.1-4.1.2.4
(1) Storage Facilities:
 storage for reagents, specimens, flammable materials, acids, bases & other supplies as necessary
- (2) separate facilities for such incompatible materials as acids & bases
- (3) vented storage for volatile solvents.

2.1-4.1.2.5 **SPECIAL DESIGN ELEMENTS**

- (1) All work counters in areas used for specimen handling, preparation of specimens or reagents & laboratory testing constructed of non-porous materials

2.1-4.1.2.6 **SAFETY PROVISIONS**

- (1) Terminal sterilization provisions
 facilities & equipment for terminal sterilization of bio-hazardous waste before transport (autoclave or electric oven)

2.1-4.1.3 **SPECIMEN COLLECTION FACILITIES**

2.1-4.1.3.1 (may be located outside laboratory work area)

2.1-4.1.3.2

- (1) Blood collection area
 work counter
 space for patient seating
 handwashing station
 supply storage
- (2) Urine & feces collection facility
 equipped with toilet & handwashing station
- (3) Storage spaces for specimen collection supplies
- (4) Work counters for labeling & computerized data entry
- (5) Storage for specimens awaiting pickup

Ventilation:

- Min. 10 air changes per hour Table 7.1
 Exhaust

2.1-4.1.6 **SUPPORT AREAS FOR LABORATORY**

- 2.1-4.1.6.1 Administrative areas
 office & space for clerical work, filing & record maintenance & storage

2.1-4.1.7 **SUPPORT AREAS FOR STAFF**

2.1-4.1.7.2 (may be located outside laboratory area & shared with other departments)

- 2.1-4.1.7.1 Lounge, locker & toilet facilities readily accessible for laboratory staff

Architectural Details & MEP Requirements

2.1-7.2.2 ARCHITECTURAL DETAILS

- 2.1-7.2.2.1 CORRIDOR WIDTH:
 - ___ Aisles, corridors & ramps in adjunct areas not intended for the housing, treatment, or use of inpatients not less than 44" in clear width
- 2.1-7.2.2.2 CEILING HEIGHT:
 - ___ Min. ceiling height 7'-10"
- 2.1-7.2.2.3 DOORS & DOOR HARDWARE:
 - (1)
 - (a) ___ Doors between corridors, rooms, or spaces subject to occupancy swing type or sliding doors
 - (b) ___ Sliding doors
 - check if not included in project
 - ___ manual or automatic sliding doors comply with NFPA 101
 - ___ code review sheet attached
 - ___ no floor tracks
 - (3) ___ Min. clear width 34.5"
 ___ Doors do not swing into corridors (except doors to non-occupiable spaces & doors with emergency breakaway hardware)
 - (4)
 - (b) ___ Lever hardware
 - (5) ___ Doors for patient toilet facilities
 - (a) ___ 2 doors separated by horizontal distance equal to one-half length of max. diagonal room dimension
 - or**
 - ___ door that swings outward
 - or**
 - ___ door equipped with emergency rescue hardware
 - or**
 - (b) ___ sliding door
 - ___ toilet room door opening in public area or corridor maintains visual privacy
- 2.1-7.2.2.7 GLAZING MATERIALS:
 - (4) ___ Glazing within 18" of floor
 - check if not included in project
 - ___ Safety glass, wire glass or plastic break-resistant material

- 2.1-7.2.2.8 HANDWASHING STATIONS:
 - (1) ___ Handw. stations in patient care areas located to be visible & unobstructed
 - (3) ___ anchoring suitable for vertical or horizontal force of 250 lbs
 - (4) Handwashing Station Countertops:
 - check if not included in project
 - ___ porcelain, stainless steel or solid surface materials
 - ___ plastic laminate countertops
 - check if not included in project
 - ___ substrate marine-grade plywood (or equivalent) with impervious seal
 - (5) ___ Designed to prevent storage beneath sink
 - (6) ___ provisions for drying hands
 - (a) ___ hand-drying device does not require hands to contact dispenser
 - (d) ___ directly accessible* to sinks
 - (7) ___ Liquid or foam soap dispensers
- 2.1-7.2.2.9 GRAB BARS:
 - (2) ___ Grab bars anchored to sustain concentrated load of 250 lbs

2.1-7.2.3 SURFACES

- 2.1-7.2.3.1 FLOORING & WALL BASES:
 - (1) ___ Selected flooring surfaces cleanable & wear-resistant for location
 - (2) ___ Smooth transitions between different flooring materials
 - (3) ___ Flooring surfaces, including those on stairways, stable, firm & slip-resistant
 - (4) ___ Floors & wall bases of toilet rooms & other wet cleaned areas are not physically affected by cleaning solutions
- 2.1-7.2.3.2 WALLS & WALL PROTECTION:
 - (1)
 - (a) ___ Washable wall finishes
 - (b) ___ Wall finishes near plumbing fixtures smooth, scrubbable & water-resistant
 - (2) ___ Monolithic wall surfaces in areas routinely subjected to wet spray or splatter
- 2.1-7.2.3.3 CEILINGS:
 - (1) Ceilings in Laboratories:
 - ___ cleanable with routine housekeeping equipment
 - ___ acoustic & lay-in ceilings
 - check if not included in project
 - ___ do not create ledges or crevices

2.1-8.2 HEATING, VENTILATION, & AIR-CONDITIONING (HVAC) SYSTEMS

- 4/6.3.1 Outdoor Air Intakes:
- 4/6.3.1.1 Located min. 25 feet from cooling towers & all exhaust & vent discharges
- Bottom of air intake is at least 6'-0" above grade
- Roof Mounted Air Intakes:
- check if not included in project
- bottom min. 3'-0" above roof level
- 4/6.3.2 Exhaust Discharges:
- Ductwork under negative pressure for exhaust air from laboratory chemical fume hoods (except in mechanical room)
- Discharge in vertical direction at least 10'-0" above roof level
- Located not less than 10'-0" horizontally from air intakes & operable windows/doors
- 4/6.4 Filtration:
- Filter banks conform to Table 6.4
- 4/6.4.1 Filter Bank #1 placed upstream of heating & cooling coils
- 4/6.4.2 Filter Bank #2 installed downstream of cooling coils & supply fan
- 4/6.7 Air Distribution Systems:
- 4/6.7.1 Ducted return or exhaust systems in spaces listed in Table 7.1 with required pressure relationships
- 4/6.7.3 Smoke & Fire barriers:
- HVAC zones coordinated with compartmentation to minimize ductwork penetrations of fire & smoke barriers
- 4/6.8 Energy Recovery Systems:
- 4/6.8.2 Exhaust systems serving potentially contaminated rooms are not used for energy recovery
- 4/6.9 Duct Lining:
- No duct lining in ductwork located downstream of Filter Bank #2
- 4/7 Space Ventilation:
- 4/7.1 Spaces ventilated per Table 7.1
- Air movement from clean areas to less clean areas
- Min. number of total air changes indicated either supplied for positive pressure rooms or exhausted for negative pressure rooms

- Recirculating room HVAC units
- check if not included in project
- each unit serves only single space
- min. MERV 6 filter for airflow downstream of cooling coils
- (5) Acoustic Considerations:
- Equipment location or acoustic provisions limit noise associated with outdoor mechanical equipment to 65 dBA at building façade
- 2.1-8.2.1.2 Ventilation & Space-Conditioning:
- (2) Mechanical ventilation provided for all rooms & areas in facility in accordance with Table 7.1 of Part 4
- 2.1-8.2.3.2 Ventilation Hoods:
- (1) Exhaust Hoods & Safety Cabinets:
- (b) makeup air provided around exhaust hoods to maintain required airflow direction & exhaust velocity
- (c) makeup systems for hoods arranged to minimize "short circuiting" of air & to avoid reduction in air velocity at point of contaminant capture
- (2) Laboratory Fume Hoods:
- (a) average face velocity min. 75 ft/minute
- connection to exhaust system to outside is separate from building exhaust system
- exhaust fan located at discharge end of system
- exhaust duct system of noncombustible corrosion-resistant material
- (b) use with strong oxidants
- check if not included in project
- stainless steel fume hoods & associated equip in air stream
- water wash & drain system for periodic flushing
- electrical equip resists penetration by water
- seals do not contain organic materials
- (c) use with infectious or radioactive materials
- check if not included in project
- hood min. face velocity of 90-110 ft/minute
- pressure-independent air-modulating devices

- ___ alarms to alert staff of fan shutdown or loss of airflow
- ___ filters 99.97% efficiency in exhaust stream
- ___ permits safe removal, disposal & replacement of contaminated filters
- ___ filters located within 10'-0" of hood
- ___ use with radioactive isotopes
 - check if not included in project
- ___ stainless steel fume hoods
- Anatomic Pathology Facilities:
 - check if not included in project
- (d) ___ local exhaust ventilation for gross examination of surgical specimens
- ___ surgical specimen storage located in ventilated cabinets to contain vapors
- (e) ___ specialty local exhaust ventilations systems equipped with visual & audible alarms for insufficient airflow

2.1-8.3 **ELECTRICAL SYSTEMS**

- 2.1-8.3.3.1 **EMERGENCY ELECTRICAL SERVICE**
- (1) ___ Emergency power per NFPA 99, NFPA 101 & NFPA 110

2.1-8.3.5 **ELECTRICAL EQUIPMENT**

- 2.1-8.3.5.2 ___ Required handwashing station tied to building electrical service
 - check if not included in project
 - ___ connected to essential electrical system

2.1-8.4.2 **PLUMBING & OTHER PIPING SYSTEMS**

2.1-8.4.3 **PLUMBING FIXTURES**

- 2.1-8.4.3.1 (1) ___ Materials material used for plumbing fixtures non-absorptive & acid resistant
- 2.1-8.4.3.2 (1) Handwashing Station Sinks:
 - ___ basins reduce risk of splashing to areas where direct patient care is provided, sterile procedures are performed & medications are prepared
 - ___ basin min. 144 square inches
 - ___ min. dimension 9 inches
 - ___ made of porcelain, stainless steel, or solid-surface materials
 - ___ water discharge point of faucets at least 10 inches above bottom of basin
 - ___ anchoring for sinks withstands min. vertical or horizontal force of 250 lbs
 - ___ fittings operated without using hands for sinks used by medical & nursing staff, patients, public & food handlers
- (2)
- (3)
- (5)
- (7)
- (8)
- (a) ___ blade handles or single lever
 - ___ min. 4 inches long
 - ___ provide clearance required for operation
- or
- (b) ___ sensor-regulated water fixtures
 - ___ meet user need for temperature & length of time water flows
 - ___ designed to function at all times & during loss of normal power