

COMPLIANCE CHECKLIST

IP23 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 2018 Edition of the FGI Guidelines for Design and Construction of Hospitals. 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 (2012) and applicable related standards contained in the appendices of the Code
- State Building Code (780 CMR)
- Accreditation requirements of The Joint Commission
- CDC Guidelines for Preventing the Transmission of Mycobacterium Tuberculosis in Health Care Facilities
- USP 797 & Regulations of the Massachusetts Board of Registration in Pharmacy
- Occupational Safety & Health Standards (OSHA)
- 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 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 marks, unless otherwise directed in the checklist. If a functional space is not affected by a renovation project, the mark "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. "E" must not be used for an existing required support space associated with a new patient care room or area.

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). An explicit floor plan or plan detail must be attached to 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, waste anesthesia gas disposal and instrument air outlets (if required) are identified respectively by the abbreviations "OX", "VAC", "MA", "WAGD" & "IA".
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 and reproduced in this checklist.

Facility Name:

DoN Project Number: (if applicable)

Facility Address:

Satellite Name: (if applicable)

Building/Floor Location:

Satellite Address: (if applicable)

Submission Dates:

Project Description:

Initial Date:

Revision Date:

Architectural Requirements**Building Systems Requirements**

2.1-4.1

LABORATORY SERVICES

2.1-4.1.2

LABORATORY WORK AREAS

2.1-4.1.2.1

- ___ Laboratory workstations
- (1) ___ space provided to accommodate equipment used & at minimum include following:
- (a) ___ laboratory work counter
- (b) ___ laboratory sink
- (2)
- (a) ___ access to vacuum & gases
☐ check if not included in project
- (b) ___ access to tele/data service
- (c) ___ access to electrical service
- (d) ___ access to computer/printer

2.1-4.1.2.2

- ___ Handwashing stations
- (1) ___ provided where staff handle specimens, handle reagents or test blood products
- (2) ___ one workstation per room
 ___ handwashing station provided at workstation
- or**
- (3) ___ more than one workstation per room
 ___ handwashing station provided within 25'-0" of all testing & specimen-handling areas
- (4) ___ handw. station provided in each enclosed room where bio-hazardous specimens & hazardous chemicals are handled

Laboratory Work Area - Bacteriology ,
 Biochemistry Cytology, Histology,
 Microbiology, Pathology, Serology
☐ check if not included in project

Ventilation:

___ Min. 6 air changes per hour Table 7.1
 ___ Exhaust
 ___ Negative pressure

Laboratory Work Area - General
☐ check if not included in project

Ventilation:

___ Min. 6 air changes per hour Table 7.1
 ___ Negative pressure

Laboratory Work Area - Media Transfer
☐ check if not included in project

Ventilation:

___ Min. 4 air changes per hour Table 7.1
 ___ Positive pressure

Laboratory Work Area - Glasswashing
☐ check if not included in project

Ventilation:

___ Min. 10 air changes per hour Table 7.1
 ___ Exhaust
 ___ Negative pressure

Laboratory Work Area - Nuclear Medicine
☐ check if not included in project

Ventilation:

___ Min. 6 air changes per hour Table 7.1
 ___ Exhaust
 ___ Negative pressure

Architectural Requirements

Laboratory Work Area - Sterilizing
☐ check if not included in project

- 2.1-4.1.2.3 ☐ Refrigerated storage facilities
 (1) ☐ refrigerator
 (2) ☐ blood storage facilities
- 2.1-4.1.2.4 ☐ Storage facilities provided for reagents, specimens, flammable materials, acids, bases & other supplies used in laboratory
- 2.1-4.1.2.5 Special Design Elements:
☐ Work counters constructed of non-porous materials in areas used for specimen handling, preparation of specimens or reagents & laboratory testing
- 2.1-4.1.2.6 Safety & Security Provisions:
 (1) ☐ Terminal sterilization provisions for bio-hazardous waste before transport (autoclave or electric oven)

SPECIMEN COLLECTION FACILITIES

(permitted to be outside laboratory work area)

- 2.1-4.1.3
 2.1-4.1.3.1
 2.1-4.1.3.2
 (1) ☐ Blood collection area
 (a) ☐ work counter
 (b) ☐ space for patient seating
 (c) ☐ handwashing station
 (d) ☐ supply storage
- (2) ☐ Urine & feces collection facility
☐ equipped with toilet & handwashing station
- (3) ☐ Storage space for specimen collection supplies
 (4) ☐ Work counter for labeling & computerized data entry
 (5) ☐ Storage for specimens awaiting pickup

SUPPORT AREAS FOR LABORATORY

☐ Office & space for clerical work, filing & record maintenance & storage

SUPPORT AREAS FOR STAFF

(location may be outside laboratory area & shared with other departments)

- 2.1-4.1.9
 2.1-4.1.9.2
 2.1-4.1.9.1 ☐ Lounge
☐ readily accessible* for laboratory staff
☐ Locker facilities
☐ readily accessible* for laboratory staff
☐ Staff toilet room
☐ readily accessible* for laboratory staff

Building Systems Requirements

Ventilation:

- ☐ Min. 10 air changes per hour Table 7.1
☐ Exhaust
☐ Negative pressure

Ventilation:

- ☐ Min. 10 air changes per hour Table 7.1
☐ Exhaust
☐ Negative pressure
☐ No recirculating room units

Ventilation:

- ☐ Min. 10 air changes per hour Table 7.1
☐ Exhaust
☐ Negative pressure
☐ No recirculating room units

***LOCATION TERMINOLOGY:**

Directly accessible: Connected to the identified area or room through a doorway, pass-through, or other opening without going through an intervening room or public space

Adjacent: Located next to but not necessarily connected to the identified area or room

Immediately accessible: Available either in or adjacent to the identified area or room

Readily accessible: Available on the same floor or in the same clinic as the identified area or room

Architectural Details & MEP Requirements

2.1-7.2.2 ARCHITECTURAL DETAILS

2.1-7.2.2.1 **CORRIDOR WIDTH:**
 NFPA 101, 18.2.3.4 ☐ Aisles, corridors & ramps in adjunct areas not intended for the housing, treatment, or use of inpatients not less than 44" in clear & unobstructed width

or

☐ Detailed code review incorporated in Project Narrative

2.1-7.2.2.2 **CEILING HEIGHT:**
 (1) ☐ Min ceiling height 7'-6" in corridors & in normally unoccupied spaces
☐ Min. ceiling height 7'-10" in other areas

2.1-7.2.2.3 **DOORS & DOOR HARDWARE:**
 (1) Door Type:
 (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
☐ detailed code review incorporated in Project Narrative
☐ no floor tracks

(3) Door Swing:
 (a) ☐ doors do not swing into corridors except doors to non-occupiable spaces (e.g. environmental services rooms & electrical closets) & doors with emergency breakaway hardware

(4) ☐ Lever hardware or push/pull latch hardware

2.1-7.2.2.7 **GLAZING MATERIALS:**
☐ Glazing within 1 foot 6 inches of floor must be safety glass, wire glass or plastic break-resistant material

2.1-7.2.2.8 **HANDWASHING STATIONS:**
 (3) (a) ☐ Handwashing station countertops made of porcelain, stainless steel, solid-surface materials or impervious plastic laminate assembly

(b) ☐ Countertops substrate
☐ check if not included in project
☐ marine-grade plywood (or equivalent material) with impervious seal

(4) ☐ Handwashing station casework
☐ check if not included in project
☐ it be designed to prevent storage beneath sink

(5) ☐ Provisions for drying hands
☐ check if not included in project (only at hand scrub facilities)

(a) ☐ hand-drying device does not require hands to contact dispenser

(b) ☐ hand-drying device is enclosed to protect against dust or soil & to ensure single-unit dispensing

(6) ☐ Liquid or foam soap dispensers

2.1-7.2.3 **SURFACES**
2.1-7.2.3.1 **FLOORING & WALL BASES:**

(1) ☐ Flooring surfaces cleanable & wear-resistant for location

(3) ☐ Smooth transitions provided between different flooring materials

(4) ☐ Flooring surfaces including those on stairways are stable, firm & slip-resistant

(5) ☐ Floors & wall bases of areas subject to frequent wet cleaning are constructed of materials that are not physically affected by germicidal or other types of cleaning solutions

- 2.1-7.2.3.2 **WALLS & WALL PROTECTION:**
- (1)(a) ☐ Wall finishes are washable
- (1)(b) ☐ Wall finishes near plumbing fixtures are smooth, scrubbable & water-resistant
- (2) ☐ Wall surfaces in areas routinely subjected to wet spray or splatter (e.g. kitchens, environmental services rooms) are monolithic or have sealed seams that are tight & smooth
- (5) ☐ Wall protection devices & corner guards durable & scrubbable
- 2.1-7.2.3.3 **CEILINGS:**
- (1) ☐ Ceilings provided in all areas except mechanical, electrical & communications equipment rooms
- (a) ☐ Ceilings cleanable with routine housekeeping equipment
- (b) ☐ Acoustic & lay-in ceilings where used not create ledges or crevices

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

- Part 3/6.1.2 Heating & Cooling Sources:
- Part 3/6.1.2.1 ☐ provide heat sources & essential accessories in number & arrangement sufficient to accommodate facility needs (reserve capacity) even when any one of heat sources or essential accessories is not operating due to breakdown or routine maintenance
- Part 3/6.1.2.2 Central cooling systems greater than 400 tons (1407 kW) peak cooling load
- ☐ check if not included in project
- ☐ number & arrangement of cooling sources & essential accessories is sufficient to support facility operation plan upon breakdown or routine maintenance of any one of cooling sources.

- Part 3/6.2 **AIR-HANDLING UNIT (AHU) DESIGN:**
- Part 3/6.2.1 ☐ AHU casing is designed to prevent water intrusion, resist corrosion & permit access for inspection & maintenance

Part 3/6.3 **OUTDOOR AIR INTAKES & EXHAUST DISCHARGES:**

- Part 3/6.3.1 Outdoor Air Intakes:
- Part 3/6.3.1.1 ☐ located min. of 25 ft from cooling towers & all exhaust & vent discharges
- ☐ outdoor air intakes located such that bottom of air intake is at least 6 ft above grade
- ☐ facilities with moderate-to-high risk of natural or man-made extraordinary incidents locate new air intakes away from public access
- Part 3/6.3.1.3 ☐ intakes on top of buildings
- ☐ check if not included in project
- ☐ located with bottom of air intake min. of 3 ft above roof level
- Part 3/6.3.1.4 ☐ intake in areaway
- ☐ check if not included in project
- ☐ bottom of areaway air intake opening is at least 6 ft above grade
- ☐ bottom of air intake opening from areaway into building is at least 3 ft above bottom of areaway
- Part 3/6.3.2 Exhaust Discharges:
- Part 3/6.3.2.1 ☐ ductwork within building is under negative pressure for exhaust of contaminated air from laboratory work area chemical fume hoods
- ☐ exhaust discharge outlets with contaminated air located such that they reduce potential for recirculation of exhausted air back into building
- Part 3/6.3.2.2 ☐ exhaust discharge outlets with contaminated air additionally is arranged to discharge to atmosphere in vertical direction at least 10 ft above adjoining roof level
- ☐ exhaust discharge outlets from laboratory work area chemical fume hoods discharge with stack velocity of at least 2500 fpm
- ☐ exhaust discharge outlets from laboratory work area chemical fume hoods is located not less than 25 ft horizontally from outdoor air intakes, openable windows/doors & areas that are normally accessible to public

Part 3/6.4	FILTRATION: <input type="checkbox"/> One filter bank MERV 13 for laboratories (see Table 6.4) <input type="checkbox"/> Each filter bank with efficiency of greater than MERV 12 is provided with differential pressure measuring device to indicate when filter needs to be changed	Part 3/7.1.a.4	<input type="checkbox"/> Entire minimum outdoor air changes per hour required by Table 7.1 for each space meet filtration requirements of Section 6.4
Part 3/6.4.1	<input type="checkbox"/> Filter Bank No. 1 is placed upstream of heating & cooling coils	Part 3/7.1.a.5	<input type="checkbox"/> Air recirculation through room unit <input type="checkbox"/> check if <u>not</u> included in project <input type="checkbox"/> complies with Table 7.1 <input type="checkbox"/> room unit receive filtered & conditioned outdoor air <input type="checkbox"/> serve only a single space <input type="checkbox"/> provides min. MERV 6 filter located upstream of any cold surface so that all of air passing over cold surface is filtered
Part 3/6.4.2	<input type="checkbox"/> Filter Bank No. 2 is placed downstream of all wet-air cooling coils & supply fan		
Part 3/6.7	AIR DISTRIBUTION SYSTEMS:	2.1-8.3	ELECTRICAL SYSTEMS
Part 3/6.7.1	<input type="checkbox"/> Maintain pressure relationships required in tables 7.1 in all modes of HVAC system operation <input type="checkbox"/> Spaces that have required pressure relationships are served by fully ducted return systems or fully ducted exhaust systems	2.1-8.3.2	ELECTRICAL DISTRIBUTION & TRANSMISSION
Part 3/6.7.2	Air Distribution Devices: <input type="checkbox"/> supply air outlets comply with Table 6.7.2	2.1-8.3.2.2 (1)	Panelboards: <input type="checkbox"/> panelboards serving life safety branch circuits serve floors on which they are located & floors immediately above & below
Part 3/6.7.3	Smoke Barriers: <input type="checkbox"/> HVAC zones coordinated with compartmentation to minimize ductwork penetrations of fire & smoke barriers.	(2)	<input type="checkbox"/> panelboard critical branch circuits serve floors on which they are located
		(3)	<input type="checkbox"/> panelboards not located in exit enclosures or exit passageways
Part 3/6.8	ENERGY RECOVERY SYSTEMS: <input type="checkbox"/> check if <u>not</u> included in project	2.1-8.3.3	POWER-GENERATING & -STORING EQUIPMENT
Part 3/6.8.1	<input type="checkbox"/> Located upstream of Filter Bank No. 2	2.1-8.3.3.1	<input type="checkbox"/> Essential electrical system or emergency electrical power
Part 3/6.8.3	<input type="checkbox"/> Energy recovery systems with leakage potential <input type="checkbox"/> check if <u>not</u> included in project <input type="checkbox"/> arranged to minimize potential to transfer exhaust air directly back into supply airstream <input type="checkbox"/> designed to have no more than 5% of total supply airstream consisting of exhaust air <input type="checkbox"/> not used from these exhaust airstream sources: laboratory fume hood	(1)	<input type="checkbox"/> essential electrical system complies with NFPA 99
		(2)	<input type="checkbox"/> emergency electrical power complies with NFPA 99
Part 3/7	SPACE VENTILATION	2.1-8.3.5	ELECTRICAL EQUIPMENT
Part 3/7.1.a	<input type="checkbox"/> Complies with Table 7.1	2.1-8.3.5.1	<input type="checkbox"/> Handwashing sinks that depends on building electrical service for operation are connected to essential electrical system <input type="checkbox"/> check if <u>not</u> included in project
Part 3/7.1.a.1	<input type="checkbox"/> Air movement is from clean to less-clean areas	2.1-8.3.5.2	<input type="checkbox"/> Electronic health record system servers & centralized storage provided with uninterruptible power supply
Part 3/7.1.a.3	<input type="checkbox"/> Min. number of total air changes required for positive pressure rooms is provided by total supply airflow <input type="checkbox"/> Min. number of total air changes required for negative pressure rooms is provided by total exhaust airflow	2.1-8.3.6	ELECTRICAL RECEPTACLES
		2.1-8.3.6.1 (1)	Receptacles In Corridors: <input type="checkbox"/> duplex-grounded receptacles for general use installed 50'-0" apart or less in all corridors <input type="checkbox"/> duplex-grounded receptacles for general use installed within 25'-0" of corridor ends

- 2.1-8.3.6.3 Essential Electrical System Receptacles:
- (1) ___ cover plates for electrical receptacles supplied from essential electrical system are distinctively colored or marked for identification
- (2) ___ same color is used throughout facility

2.1-8.4 PLUMBING SYSTEMS

- 2.1-8.4.2 Plumbing & Other Piping Systems:
- 2.1-8.4.2.1(3) ___ no plumbing piping exposed overhead or on walls where possible accumulation of dust or soil may create cleaning problem
- 2.1-8.4.2.5 Heated Potable Water Distribution Systems:
- (2) ___ heated potable water distribution systems serving patient care areas are under constant recirculation
- ___ non-recirculated fixture branch piping max. length 25'-0"
- (3)(a) ___ no installation of dead-end piping (except for empty risers mains & branches for future use)
- (3)(c) ___ any existing dead-end piping is removed
- (3)(b) ___ ☐ check if not included in project
- (4)(a) ___ water-heating system supplies water at temperatures & amounts indicated in Table 2.1-4
- 2.1-8.4.2.6 Drainage Systems:
- (1)(a) ___ drainage piping installed above ceiling of or exposed in electronic data processing areas & electric closets have special provisions (e.g. double wall containment piping or oversized drip pans) to protect space below from leakage & condensation
- (1)(b) ___ drip pan for drainage piping above ceiling of sensitive area
- ___ ☐ check if not included in project
- ___ accessible
- ___ overflow drain with outlet located in normally occupied area

2.1-8.4.3 PLUMBING FIXTURES

- 2.1-8.4.3.1(1) ___ Materials used for plumbing fixtures are non-absorptive & acid-resistant
- 2.1-8.4.3.2 Handwashing Station Sinks:
- (1) ___ handwashing sinks designed with basins that will reduce risk

- of splashing to areas where medications are prepared
- (2) ___ sink basins have nominal size of no less than 144 square inches
- ___ sink basins have min. dimension 9 inches in width or length
- (3) ___ sink basins are made of porcelain, stainless steel or solid-surface materials
- (5) ___ water discharge point min. 10" above bottom of basin
- (7) ___ anchored so that allowable stresses are not exceeded where vertical or horizontal force of 250 lbs. is applied
- (8) ___ sinks used by staff, patients & public have fittings that can be operated without using hands (may be single-lever or wrist blade devices)
- (a) ___ blade handles
- ___ ☐ check if not included in project
- ___ at least 4 inches in length
- ___ provide clearance required for operation
- (b) ___ sensor-regulated water fixtures
- ___ ☐ check if not included in project
- ___ meet user need for temperature & length of time water flows
- ___ designed to function at all times and during loss of normal power

2.1-8.6.2 ELECTRONIC SURVEILLANCE SYSTEMS

- ___ ☐ check if not included in project
- 2.1-8.6.2.2 ___ monitoring devices are located so they are not readily observable by general public or patients
- 2.1-8.6.2.3 ___ electronic surveillance systems receive power from essential electrical system