**COMPLIANCE CHECKLIST**

**IP16\_Radiation Therapy**

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:

1. NFPA 101 Life Safety Code (2012) and applicable related standards contained in the appendices of the Code
2. State Building Code (780 CMR)
3. Accreditation requirements of The Joint Commission
4. CDC Guidelines for Preventing the Transmission of Mycobacterium Tuberculosis in Health Care Facilities
5. USP 797 & Regulations of the Massachusetts Board of Registration in Pharmacy
6. Occupational Safety & Health Standards (OSHA)
7. Accessibility Guidelines of the Americans with Disabilities Act (ADA)
8. Architectural Access Board Regulations (521 CMR)
9. 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. |

1. All room functions marked with "X" must be shown on the plans with the same name labels as in this checklist.
2. 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.
3. 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”.
4. Requirements referenced with “FI” result from formal interpretations from the FGI Interpretations Task Group.
5. 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** |  |
| --- | --- | --- | --- |
| 2.2-3.5 | **RADIATION THERAPY** |  |  |
|  |  |  |  |
| 2.2-3.5.2 | **EXTERNAL BEAM RADIATION THERAPY SUITE**  check if not included in project |  |  |
| A2.2-3.5.a | (Radiation treatment modalities that use high-energy, non-radioactive beams) |  |  |
|  |  |  |  |
| 2.2-3.5.2.1 | Examination room        examination room provided for each external beam radiation therapy room | Ventilation:        Min. 6 air changes per hour | Table 7.1 |
| 2.2-3.5.8.15(1) | min. clear floor area 100 sf | Lighting:        Portable or fixed exam light | 2.1‑8.3.4.3(3) |
| 2.2-3.5.8.15(2) | handwashing station | Power:        Min. 8 receptacles in total | Table 2.1-1 |
|  |  | Min. 4 receptacles convenient to head of gurney or bed |  |
|  |  | Nurse Call System: |  |
|  |  | Staff assistance station        Emergency call station | Table 2.1-2 |
|  |  |  |  |
| 2.2-3.5.2.2  (1) | Radiation therapy room  Space Requirements: | Ventilation:        Min. 6 air changes per hour | Table 7.1 |
| (a) | room sized to accommodate following: | Nurse Call System:        Staff assistance station | Table 2.1-2 |
|  | equipment | Emergency call station |  |
|  | access to equipment for patient on gurney |  |  |
|  | medical staff access to equipment & patient |  |  |
|  | service access to equipment |  |  |
|  |  |  |  |
| (b) | radiation therapy room sized in compliance with manufacturer’s technical specifications        manufacturer’s technical specifications have been submitted to DPH Plan Review |  |  |
|  |  |  |  |
|  | room sized for min. clearance 4’‑0” on three sides of treatment table to facilitate bed transfer & provide access to patient |  |  |
|  | door swing does not encroach on equipment or on patient circulation or transfer space |  |  |
|  |  |  |  |
| 2.2-3.5.2.3 | **Support Area for External Beam Radiation Therapy Suite:** |  |  |
| (1)(a) | Mold room        handwashing station | Ventilation:        Exhaust hood | 2.2-3.5.2.3(1)(a) |
| (b) | block room (may be combined with mold room)        storage |  |  |
| 2.2-3.5.3 | **RADIOSURGERY SUITE**  check if not included in project |  |  |
| A2.2-3.5.3 | (Rotating, robotic, or gantry-based external beam therapy systems of higher power & accuracy than conventional external beam therapy systems, e.g. Gamma Knife or Cyber Knife systems) |  |  |
| 2.2-3.5.3.1 |  |  |  |
| (1) | Radiosurgery suite readily accessible\* to imaging services suite to facilitate image acquisition prior to radiosurgery treatment |  |  |
|  |  |  |  |
| (2) | Examination room | Ventilation: |  |
| (a) | examination room provided for each radiosurgery room | Min. 6 air changes per hour | Table 7.1 |
| 2.2-3.5.8.15(1) | min. clear floor area 100 sf | Lighting:        Portable or fixed exam light | 2.1‑8.3.4.3(3) |
| 2.2-3.5.8.15(2) | handwashing station | Power:        Min. 8 receptacles in total | Table 2.1-1 |
|  | **or**        private pre- & post-procedure patient care station provided for each radiosurgery room | Min. 4 receptacles convenient to head of gurney or bed  Nurse Call System:        Staff assistance station | Table 2.1-2 |
|  |  | Emergency call station |  |
| 2.2-3.5.3.2 | Radiosurgery rooms (i.e. gamma knife/cyber knife rooms) | Ventilation:        Min. 6 air changes per hour | Table 7.1 |
| (1) | Space Requirements: | Nurse Call System: |  |
| (a) | sized to accommodate patient access on gurney, medical staff access to equipment & patient & service access | Staff assistance station        Emergency call station | Table 2.1-2 |
|  | radiosurgery rooms sized & configured to meet manufacturer’s technical specifications        manufacturer’s technical specifications have been submitted to DPH Plan Review |  |  |
|  |  |  |  |
| (b) | min. clearance 4’-0” provided on all sides of treatment table for maintenance access & clearance around table sufficient to facilitate patient transfer |  |  |
|  | door swing does not encroach on equipment or on patient circulation or transfer space |  |  |
|  |  |  |  |
| (2) | handwashing station |  |  |
|  |  |  |  |
| 2.2-3.5.3.3 | Pre- & post-procedure/recovery accommodations |  |  |
|  | check if not included in project |  |  |
| 2.1‑3.4.1.1 | patient care stations accommodate lounge gurneys for pre‑ & post‑procedure (recovery) patient care        patient care stations accommodate seating space for family/visitors |  |  |
| 2.2-3.5.3.6(2) | storage for patient belongings |  |  |
| 2.1‑3.4.1.4 | Number of Patient Care Stations: |  |  |
| (1) | pre‑ & post‑procedure patient care stations are combined into one patient care area        at least two patient care stations for each procedure room |  |  |
|  |  |  |  |
| 2.1‑3.4.2.2 | Space Requirements: |  |  |
| (2)(a) | patient care bays  check if not included in project |  |  |
|  | min. clearance 5’‑0” between sides of patient gurneys | Ventilation:        Min. 6 air changes per hour        No recirculating room units | Table 7.1 |
|  | min. clearance 3’‑0” between sides of patient gurneys & adjacent\* walls or partitions | Power:        Min. 8 receptacles in total        convenient to head of gurney | Table 2.1-1 |
|  | min. clearance 2’‑0” between foot of patient gurneys & cubicle curtain | Nurse Call System:        Staff assistance station        Emergency call station | Table 2.1-2 |
|  |  | Medical Gases:        1 OX, 3 VAC, 1 MA per station | Table 2.1-3 |
| (2)(b) | patient care cubicles  check if not included in project |  |  |
|  | min. clearance 3’‑0” between sides of patient gurneys & adjacent\* walls or partitions | Ventilation:        Min. 6 air changes per hour        No recirculating room units | Table 7.1 |
|  | min. clearance 2’‑0” between foot of patient gurneys & cubicle curtain | Power:        Min. 8 receptacles in total        convenient to head of gurney or bed | Table 2.1-1 |
|  |  | Nurse Call System:        Staff assistance station        Emergency call station | Table 2.1-2 |
|  |  | Medical Gases:        1 OX, 3 VAC, 1 MA per station | Table 2.1-3 |
| (2)(c) | single‑patient rooms  check if not included in project        min. clearance 3’‑0” between sides & foot of gurneys & adjacent\* walls or partitions | Ventilation:        Min. 6 air changes per hour        No recirculating room units | Table 7.1 |
|  |  | Power:        Min. 8 receptacles in total        convenient to head of gurney or bed | Table 2.1-1 |
|  |  | Nurse Call System:        Staff assistance station        Emergency call station | Table 2.1-2 |
|  |  | Medical Gases:        1 OX, 3 VAC, 1 MA per station | Table 2.1-3 |
| 2.1‑3.4.2.4 | Patient Privacy: |  |  |
| 2.1‑2.1.2 | provisions are made to address patient visual & speech privacy |  |  |
|  |  |  |  |
| 2.1‑3.4.2.5 | Handwashing stations |  |  |
| 2.1‑2.8.7.1 | located in each room where hands‑on patient care is provided |  |  |
| 2.1‑2.8.7.3 | handwashing station serves multiple patient care stations  check if not included in project |  |  |
| (1) | at least 1 handwashing station for every 4 patient care stations or fewer & for each major fraction thereof |  |  |
| (2) | handwashing stations evenly distributed |  |  |
|  |  |  |  |
| 2.2-3.5.3.4 | **SUPPORT AREAS FOR RADIOSURGERY ROOMS**  check if not included in project (only if radiation therapy modalities do not include radiosurgery) |  |  |
| (1) | Space for sterilization of head-frames |  |  |
| (2) | Target planning area |  |  |
|  |  |  |  |
| (3) | Medication safety zone |  |  |
| 2.1‑2.8.8.1(2) | Design Promoting Safe Medication Use: |  |  |
| (a) | located out of circulation paths |  |  |
| (b) | work space designed so that staff can access information & perform required tasks | Lighting:        Task‑specific lighting level min. 100 foot‑candles | 2.1‑2.8.8.1(2)(d) |
| (c) | work counters provide space to perform required tasks |  |  |
| (e) | sharps containers placed at height that allows users to see top of container |  |  |
| (f) | max. 45 dBA noise level caused by building systems |  |  |
|  |  |  |  |
| 2.1‑2.8.8.2(1) | medication preparation room |  |  |
| (a) | under visual control of nursing staff | Ventilation: |  |
| (b) | work counter | Min. 4 air changes per hour | Table 7.1 |
|  | handwashing station | Lighting: |  |
|  | lockable refrigerator | Task lighting | 2.1‑2.8.8.1(2)(d) |
|  | locked storage for controlled drugs |  |  |
|  | sharps containers  check if not included in project |  |  |
| (c) | self‑contained medication‑dispensing unit  check if not included in project |  |  |
|  | room designed with space to prepare medications  **or** |  |  |
| 2.1‑2.8.8.2(2) | automated medication‑dispensing unit |  |  |
| (a) | located at nurse station, in clean workroom or in alcove | Lighting:        Task lighting | 2.1‑2.8.8.1(2)(d) |
| (c) | handwashing station located next to stationary medication‑dispensing units or stations |  |  |
| 2.2-3.5.3.4(4) |  |  |  |
| 2.1‑2.8.9 | Nourishment area or room | Ventilation: |  |
| 2.1‑2.8.9.2(1) | handwashing station | Min. 2 air changes per hour | Table 7.1 |
| 2.1‑2.8.9.2(2) | work counter |  |  |
| 2.1‑2.8.9.2(3) | refrigerator |  |  |
| 2.1‑2.8.9.2(5) | storage cabinets |  |  |
| 2.2-3.5.3.4(5) | Storage for head-frames (may be located at each pre- & post-procedure patient care station) |  |  |
|  |  |  |  |
| (6) | Toilet room for patients | Ventilation:        Min. 10 air changes per hour        Exhaust        Negative pressure        No recirculating room units | Table 7.1 |
|  | Toilet room for staff | Ventilation:        Min. 10 air changes per hour        Exhaust        Negative pressure        No recirculating room units | Table 7.1 |
|  | (7) Area for sedation of pediatric patients |  |  |
|  |  |  |  |
| 2.2-3.5.3.5(1) | Frame pin sterilization        work counter to accommodate small autoclave |  |  |
|  |  |  |  |
| 2.2-3.5.4 | **PROTON THERAPY SUITE** |  |  |
| 2.2-3.5.4.1(1) | Rooms & spaces accommodate equipment manufacturer’s technical specifications        equipment manufacturer’s technical specifications have been submitted to DPH Plan Review |  |  |
| 2.2-3.5.4.1(3) | Examination rooms        two examination rooms provided for each proton therapy room | Ventilation:        Min. 6 air changes per hour | Table 7.1 |
| 2.2-3.5.8.15(1) | min. clear floor area 100 sf | Lighting:        Portable or fixed exam light | 2.1‑8.3.4.3(3) |
| 2.2-3.5.8.15(2) | handwashing station | Power:        Min. 8 receptacles in total | Table 2.1-1 |
|  |  | Min. 4 receptacles convenient to head of gurney or bed |  |
|  |  | Nurse Call System:        Staff assistance station        Emergency call station | Table 2.1-2 |
|  |  |  |  |
| (1)(a) | Proton therapy room        proton therapy equipment | Ventilation:        Min. 6 air changes per hour | Table 7.1 |
|  | accommodates patient access on gurney        accommodates medical staff access to equipment | Nurse Call System:        Staff assistance station        Emergency call station | Table 2.1-2 |
|  | accommodates service access |  |  |
| (b) | room sized to provide min. clearance 4’‑0” on three sides of treatment table to facilitate bed transfer & provide access to patient |  |  |
|  | door swing does not encroach on equipment or on patient circulation or transfer space |  |  |
|  |  |  |  |
| (2) | cyclotron vault |  |  |
|  |  |  |  |
| (3) | hand sanitation station located immediately inside or outside entrance to proton therapy room |  |  |
| 2.2-3.5.4.3 | Patient holding gurney bays        min. two gurney hold bays provided for each proton therapy treatment room |  |  |
| (1) | located adjacent\* to treatment rooms & screened for privacy |  |  |
|  |  |  |  |
| (2) | Separate waiting areas for patients        separation & privacy of outpatient & inpatient populations |  |  |
|  |  |  |  |
| 2.2-3.5.4.6 | Support Areas for Proton Accelerators: |  |  |
| (1) | general supply storage in treatment room for patient care supplies |  |  |
| (2) | storage for patient positioning devices |  |  |
| (3) | storage for patient-specific treatment devices (e.g. apertures & compensators) |  |  |
| (4) | post-treatment storage room for patient-specific treatment devices (e.g. apertures & range compensators) |  |  |
| (a)  (b) | separate shielded room (may be located away from proton therapy suite) |  |  |
|  |  |  |  |
| 2.2-3.5.10.3 | Patient changing area        two gowning cubicles provided for each proton therapy room |  |  |
| (1) | secure storage for valuables & clothing |  |  |
| (2) | at least one space large enough for staff-assisted dressing |  |  |
|  |  |  |  |
| 2.2-3.5.7 | **SPECIAL DESIGN ELEMENTS FOR RADIATION THERAPY SUITE** |  |  |
| 2.2-3.5.7.1 | Architectural Details: |  |  |
| (1) | floor structure meets min. load requirements for equipment, patients & personnel |  |  |
| (2) | ceiling-mounted equipment have properly designed rigid support structures located above finished ceiling |  |  |
| (3) | direct-shielded door to radiation vault  check if not included in project |  |  |
|  | both motor-driven automatic opening system & manual emergency opening system are provided |  |  |
| (4) | height & width of doorways, elevators & mazes allow delivery of equipment & replacement sources into treatment rooms |  |  |
|  |  |  |  |
| (5) | Radiation Protection Requirements: |  |  |
| (a) | radiation protection provided in linear accelerator rooms, radiosurgery treatment rooms & proton therapy rooms |  |  |
| (b) | both photons & neutrons are taken into account in shielding for electron accelerators of higher energy |  |  |
| (c) | layouts designed to prevent escape of radioactive particles |  |  |
| (d) | openings into room including doors ductwork vents & electrical raceways & conduits are baffled to prevent direct exposure to other areas of facility |  |  |
| (e) | physicist & vendor input have been obtained in design process |  |  |
|  | certified physicist representing owner specify type location & amount of protection to be installed in accordance with final approved department layout & equipment selection        shielding plans have been submitted to the DPH Radiation Control Program |  |  |
|  |  |  |  |
| 2.2-3.5.8 | **SUPPORT AREAS FOR RADIATION THERAPY** |  |  |
| 2.2-3.5.8.1 | (may be shared between different services in radiation therapy suite or other areas) |  |  |
| 2.2-3.5.8.4 | Business office and/or reception/control area |  |  |
|  |  |  |  |
| 2.2-3.5.8.13(1) | Gurney storage area        immediately accessible\* to radiation therapy treatment rooms |  |  |
|  |  |  |  |
| 2.2-3.5.8.14 | Environmental services room | Ventilation: |  |
| 2.1‑2.8.14.1  2.1‑2.8.14.2(1) | readily accessible\* to unit or floor it serves (permitted to serve more than one patient care unit on floor)        service sink or floor‑mounted mop sink | Min. 10 air changes per hour        Exhaust        Negative pressure        No recirculating room units | Table 7.1 |
| 2.1‑2.8.14.2(2) | provisions for storage of supplies & housekeeping equipment |  |  |
| 2.1‑2.8.14.2(3) | handwashing station  **or**        hand sanitation station |  |  |
|  |  |  |  |
| 2.2-3.5.8.16 | **OPTIONAL SUPPORT AREAS FOR RADIATION THERAPY**  check if not included in project |  |  |
| (1)(a) | Oncologist’s office (may be combined with consultation room) |  |  |
| (1)(b) | Physicist’s office (may be combined with treatment planning & record room) |  |  |
| (2) | Consultation room  check if not included in project (only if private prep/holding rooms are provided) |  |  |
| (3) | Quality control area w/ image viewing station |  |  |
|  |  |  |  |
| 2.2-3.5.10 | **SUPPORT AREAS FOR PATIENTS** |  |  |
| 2.2-3.5.10.1 | Patient waiting areas |  |  |
| (1) | waiting area for gowned patients provided adjacent\* to changing area |  |  |
| (2) | provisions made for patient privacy in waiting area |  |  |
| 2.2-3.5.10.2 | Patient toilet rooms        reserved for radiation therapy patients        directly accessible\* to waiting areas & procedure rooms | Ventilation:        Min. 10 air changes per hour        Exhaust        Negative pressure        No recirculating room units | Table 7.1 |
|  |  |  |  |

\*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** |
|  |  |
|  | CORRIDOR WIDTH: |
| 2.1‑7.2.2.1  NFPA 101, 18.2.3.4 | Aisles, corridors & ramps required for exit access in a hospital not less than 8'‑0" in clear & unobstructed width  **or**        Detailed code review incorporated in Project Narrative |
|  |  |
|  | 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 |
| (2) | Min. height 7’‑0” in radiation therapy procedure room from floor to lowest protruding element of equipment or fixture in stowed position |
| (3) | Min. height 7’‑6” above floor of suspended tracks, rails & pipes located in traffic path for patients in beds & on stretchers |
|  | Min. ceiling height 7’‑10” in other areas |
|  |  |
| 2.1‑7.2.2.3  (1)  (a)  (b) | DOORS & DOOR HARDWARE:  Door Type:        doors between corridors, rooms, or spaces subject to occupancy swing type or sliding doors        sliding doors  check if not included in project |
|  | manual or automatic sliding doors comply with NFPA 101        detailed code review included in Project Narrative        no floor tracks |
| (2)  (a) | Door Opening:        min. 45.5” clear door width for diagnostic/treatment areas        min. 83.5” clear door height for diagnostic/treatment areas |
| (b) | swinging doors for personnel use in addition to sliding doors  check if not included in project        min. clear width 34.5” |
| (3) | Door Swing: |
| (a) | doors do not swing into corridors except doors to non‑occupiable spaces & doors with emergency breakaway hardware |
| (4) | Lever hardware or push/pull latch hardware |
|  |  |
| (5) | Doors for Patient Toilet Facilities: |
| (a) | two separate doors  **or** |
|  | door that swings outward  **or** |
|  | door equipped with emergency rescue hardware (permits quick access from outside the room to prevent blockage of the door)  **or** |
|  | sliding door other than pocket door |
| (b) | toilet room opens onto public area or corridor  check if not included in project |
|  | visual privacy is maintained |
|  |  |
| 2.1‑7.2.2.7 | GLAZING MATERIALS:        Glazing within 1 foot 6 inches of floor  check if not included in project |
|  | must be safety glass, wire glass or plastic break‑resistant material |
|  |  |
| 2.1‑7.2.2.8 | HANDWASHING STATIONS: |
| (1)(c) | Handwashing stations in patient care areas located so they are visible & unobstructed |
| (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        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 |
| 2.1‑7.2.2.9 | GRAB BARS: |
| (1) | Grab bars anchored to sustain concentrated load 250 pounds |
| (3) | Ends of grab bars constructed to prevent snagging clothes of patients staff & visitors |
| 2.1‑7.2.2.10 | HANDRAILS: |
| (1) | Handrails installed on both sides of patient use corridors |
| (3) | Rail ends return to wall or floor |
| (4) | Handrail gripping surfaces & fasteners are with 1/8‑inch min. radius |
| (5) | Handrails have eased edges & corners |
| (6) | Handrail finishes are cleanable |
| 2.1‑7.2.2.11 | RADIATION PROTECTION:  check if no radiation emitting equipment is included in project |
|  | Protection for X‑ray & Gamma‑ray installations are shown in the plans        Documentation for radiation protection has been submitted separately to the DPH Radiation Control Program |
| 2.1‑7.2.2.12 | NOISE CONTROL: |
| (2) | Noise reduction criteria in Table 1.2‑6 applicable to partitions, floors & ceiling construction are met in patient areas |
|  |  |
| 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 soiled workrooms, toilet rooms & other 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 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 do not create ledges or crevices |
|  |  |
| 2.1‑7.2.4 | **FURNISHINGS:** |
| 2.1‑7.2.4.1 | built‑in furnishings upholstered with impervious materials in patient treatment areas with risks of exposure & contamination from bodily fluids & other fluids |
| 2.1‑7.2.4.3 | Privacy curtains in patient care areas are washable |
|  |  |
| 2.1‑8.2 | **HEATING VENTILATION & AIR‑CONDITIONING (HVAC) SYSTEMS** |

|  |  |
| --- | --- |
| Part 3/6.1 | UTILITIES: |
| Part 3/6.1.2 | Heating & Cooling Sources: |
| Part 3/6.1.2.1 | heat sources & essential accessories provided 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’-0” from cooling towers & all exhaust & vent discharges        outdoor air intakes located such that bottom of air intake is at least 6’-0” above grade        air intakes located 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’-0” 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’-0” above grade        bottom of air intake opening from areaway into building is at least 3’-0” above bottom of areaway |
|  |  |
| Part 3/6.4 | FILTRATION: |
|  | Two filter banks for inpatient care (see Table 6.4)        Filter Bank No. 1: MERV 7        Filter Bank No. 2: MERV 14        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 3/6.4.1 | Filter Bank No. 1 is placed upstream of heating & cooling coils |
| Part 3/6.4.2 | Filter Bank No. 2 is placed downstream of all wet-air cooling coils & supply fan |
|  |  |
| Part 3/6.7 | AIR DISTRIBUTION SYSTEMS: |
| Part 3/6.7.1 | Maintain pressure relationships required in tables 7.1 in all modes of HVAC system operation        Spaces that have required pressure relationships are served by fully ducted return systems or fully ducted exhaust systems        Inpatient facilities rooms are served by fully ducted return or exhaust systems |
|  |  |
| Part 3/6.7.2 | Air Distribution Devices: |
|  | supply air outlets comply with Table 6.7.2 |
|  |  |
| Part 3/6.7.3 | Smoke Barriers:        HVAC zones coordinated with compartmentation to minimize ductwork penetrations of fire & smoke barriers. |
|  |  |
| Part 3/6.8 | ENERGY RECOVERY SYSTEMS:  check if not included in project |
| Part 3/6.8.1 | Located upstream of Filter Bank No. 2 |
|  |  |
| Part 3/6.8.3 | Energy recovery systems with leakage potential  check if not included in project        arranged to minimize potential to transfer exhaust air directly back into supply airstream        designed to have no more than 5% of total supply airstream consisting of exhaust air        not used from these exhaust airstream sources: soiled holding room |
|  |  |
| Part 3/7 | SPACE VENTILATION |
| Part 3/7.1.a  Part 3/7.1.a.1 | Spaces ventilated according to Table 7.1        Air movement is from clean to less-clean areas |
|  |  |
| Part 3/7.1.a.3 | Min. number of total air changes required for positive pressure rooms is provided by total supply airflow        Min. number of total air changes required for negative pressure rooms is provided by total exhaust airflow |
| Part 3/7.1.a.4 | Entire minimum outdoor air changes per hour required by Table 7.1 for each space meet filtration requirements of Section 6.4 |
|  |  |
| Part 3/7.1a.5 | Air recirculation through room unit  check if not included in project        complies with Table 7.1 |
|  | room unit receive filtered & conditioned outdoor air        serve only a single space |
|  | provides min. MERV 6 filter located upstream of any cold surface so that all of air passing over cold surface is filtered |
|  |  |

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| --- | --- |
| 2.1‑8.3 | **ELECTRICAL SYSTEMS** |
|  |  |
| 2.1‑8.3.2 | **ELECTRICAL DISTRIBUTION & TRANSMISSION** |
| 2.1‑8.3.2.2 | Panelboards: |
| (1) | panelboards serving life safety branch circuits serve floors on which they are located & floors immediately above & below |
| (2) | panelboard critical branch circuits serve floors on which they are located |
| (3) | panelboards not located in exit enclosures or exit passageways |
|  |  |
| 2.1-8.3.3 | **POWER-GENERATING & -STORING EQUIPMENT** |
| 2.1-8.3.3.1 | Essential electrical system or emergency electrical power |
| (1) | essential electrical system complies with NFPA 99 |
| (2) | emergency electrical power complies with NFPA 99 |
|  |  |
| 2.1‑8.3.5 | **ELECTRICAL EQUIPMENT** |
| 2.1‑8.3.5.1 | Handwashing sinks & scrub sinks that depends on building electrical service for operation are connected to essential electrical system  check if not included in project |
| 2.1‑8.3.5.2 | Electronic health record system servers & centralized storage provided with uninterruptible power supply |
|  |  |
| 2.1‑8.3.6 | **ELECTRICAL RECEPTACLES** |
| 2.1‑8.3.6.1 | Receptacles In Corridors: |
| (1) | duplex‑grounded receptacles for general use installed 50’‑0” apart or less in all corridors        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)  (3)(c) | no installation of dead‑end piping (except for empty risers mains & branches for future use) |
| (3)(b) | any existing dead‑end piping is removed  ☐ 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  check if not included in project |
|  | special provisions 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 that is not open to restricted 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) | sinks in handwashing stations are designed with basins that will reduce risk of splashing to areas where direct patient care is provided, sterile procedures are performed & 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 of faucets is at least 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 |
| 2.1‑8.4.3.4 | Ice‑Making Equipment:        copper tubing provided for supply connections to ice‑making equipment |
| 2.1‑8.4.4 | **MEDICAL GAS & VACUUM SYSTEMS** |
|  | Station outlets provided as indicated in Table 2.1‑3 |
|  |  |
| 2.1‑8.5.1 | **CALL SYSTEMS** |
| 2.1‑8.5.1.1 |  |
| (1) | Nurse call stations provided as required in Table 2.1‑2 |
| (2) | Nurse call systems report to attended location with electronically supervised visual & audible annunciation as indicated in Table 2.1‑2 |
| (4) | Call system complies with UL 1069 “Standard for Hospital Signaling & Nurse Call Equipment” |
| (5) | Wireless nurse call system  ☐ check if not included in project |
|  | complies with UL 1069 |
|  |  |
| 2.1‑8.5.1.3 | Bath Stations:        bath station that can be activated by patient lying on floor provided at each patient toilet |
| (1) | alarm in these areas can be turned off only at bath station where it was initiated |
| (3) | toilet bath stations located on the side of toilets within 12” of front of toilet bowl & 3'-0" to 4’‑0” above floor |
|  |  |
| 2.1‑8.5.1.5 | Emergency call stations are equipped with continuous audible or visual confirmation to person who initiated the code call |
|  |  |
| 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 |
|  |  |