

**GUIDELINES FOR CONSTRUCTION/RENOVATION/DEMOLITION
PROJECTS AND ENVIRONMENTAL CONTROL OF
INVASIVE FUNGAL INFECTION AND
OTHER HOSPITAL ACQUIRED INFECTIONS**

POLICY 5.2
Issued: 12/06
Last Approval: 5/25

***Table A – Type of Construction Activity:**

Type A	Inspection and non-invasive activities. These include, but are not limited to: Removal of ceiling tile for visual inspection-limited to 1 tile per 50 square feet with limited exposure time. Limited building system maintenance (e.g., pneumatic tube station, HVAC system, fire suppression system, electrical and carpentry work to include painting without sanding) that does not create dust or debris. Clean plumbing activity limited in nature.
Type B	Small scale, short duration activities that create minimal dust. These include, but are not limited to: Work conducted above the ceiling (e.g., prolonged inspection or repair of firewalls and barriers, installation of conduit and/or cabling, and access to mechanical and/or electrical chase spaces). Fan shutdown/startup. Installation of electrical devices or new flooring that produces minimal dust and debris. The removal of drywall where minimal dust and debris is created. Controlled sanding activities (e.g., wet or dry sanding) that produce minimal dust and debris.
Type C	Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies (e.g., counter tops, cupboards, sinks). Work that meets this criteria <u>and</u> includes, but not limited to: Removal of preexisting floor covering, walls, casework, or other building components. New drywall placement. * Renovation work in a single room. * Non-existing cable pathway or invasive electrical work above ceilings. The removal of drywall where a moderate amount of dust and debris is created. * Dry sanding where a moderate amount of dust and debris is created. * Work creating significant vibration and/or noise. Moderate to high level of dust generating activities that cannot be completed in a single work shift.
Type D	Major demolition, construction, and renovation projects. Work that meets this criteria <u>and</u> includes, but not limited to: Removal or replacement of building system component(s). Removal/installation of drywall partitions. * Invasive large-scale new building construction. * Renovation work in two or more rooms. *

Note: *Items that are typically associated with high levels of dust generation. This is not a comprehensive list; each project should be evaluated individually

***Table B – Population and Geographic Risks Groups:**

Group 1 Low Risk	Group 2 Medium Risk	Group 3 High Risk	Group 4 Highest Risk
Non-patient care areas such as:	Patient care support areas such as:	Patient care areas such as:	Procedural, invasive, sterile support and highly compromised patient care areas such as:
<input type="checkbox"/> Public hallways and gathering areas not on clinical units. <input type="checkbox"/> Office areas not on clinical units. <input type="checkbox"/> Breakrooms not on clinical units. <input type="checkbox"/> Bathrooms or locker rooms not on clinical units. <input type="checkbox"/> Mechanical rooms not on clinical units. <input type="checkbox"/> Hospitality closets not on clinical units.	<input type="checkbox"/> Waiting areas. <input type="checkbox"/> Clinical Technologies work areas. <input type="checkbox"/> Materials management. <input type="checkbox"/> Sterile processing department - dirty side. <input type="checkbox"/> Kitchen, cafeteria, gift shop, coffee shop, and food kiosks.	<input type="checkbox"/> All acute care units and patient care room, excluding those falling within the Highest Risk groups. <input type="checkbox"/> Emergency department. <input type="checkbox"/> Occupational health clinics. <input type="checkbox"/> Pharmacy - general work zone. <input type="checkbox"/> Medication rooms and clean utility rooms. <input type="checkbox"/> Imaging suites: diagnostic imaging. <input type="checkbox"/> Clinical laboratory.	<input type="checkbox"/> All transplant and intensive care units. <input type="checkbox"/> All oncology units. <input type="checkbox"/> Perioperative areas. <input type="checkbox"/> Procedural suites. <input type="checkbox"/> Pharmacy compounding. <input type="checkbox"/> Sterile processing department - clean side. <input type="checkbox"/> Transfusion services. <input type="checkbox"/> Dialysis <input type="checkbox"/> Imaging suites: invasive imaging.

Note: *Designation of grouping for any location may be changed at the discretion of HEIP






°Table C – Class of Precautions:

Patient Risk Group	TYPE A	TYPE B	TYPE C	TYPE D
Group 1 - LOW	I	II	II	III
Group 2 - MEDIUM	I	II	III	IV
Group 3 - HIGH	II	III	IV	V
Group 4 - HIGHEST	III	IV	V	V

Note: °Class III precautions that cannot be sealed and completely isolated from occupied patient care spaces should be elevated to include negative air exhaust requirements as listed in Class IV

Matrix of Precautions for Construction, Renovation and Operations

Table D – Minimum Required Infection Control Precautions by Class | Before and During Work Activity

Class of Precautions	Mitigation Activities (Performed Before and During Work Activity)	
Class I  Does Not Need HEIP Approval	1. Perform noninvasive work activity as to not block or interrupt patient care. 2. Perform noninvasive work activities in areas that are not directly occupied with patients.	3. Perform noninvasive work activity in a manner that does not create dust. 4. Immediately replace any displaced ceiling tile before leaving the area and/or at end of noninvasive work activity.
Class II (Includes Class I)  Does Not Need HEIP Approval	1. Perform only limited dust work and/or activities designed for basic facilities and engineering work. 2. Perform limited dust and invasive work following standing precautions procedures approved by the organization.	3. This Class of Precautions must never be used for construction or renovation activities.
Class III (Includes Class II) 	1. Provide active means to prevent airborne dust dispersion into the occupied areas. 2. Means for controlling minimal dust dispersion may include hand-held HEPA vacuum devices, polyethylene plastic containment, or isolation of work area by closing room door. 3. Remove or isolate return air diffusers to avoid dust from entering the HVAC system. 4. Remove or isolate the supply air diffusers to avoid positive pressurization of the space. 5. If work area is contained, then it must be neutrally to negatively pressurized at all times.	6. Seal all doors with tape that will not leave residue. 7. Contain all trash and debris in the work area. 8. Nonporous/smooth and cleanable containers (with a hard lid) must be used to transport trash and debris from the construction areas. These containers must be damp-wiped cleaned and free of visible dust/debris before leaving the contained work area. 9. Install an adhesive (dust collection) mat at entrance of contained work area based on facility policy. Adhesive mats must be changed routinely and when visibly soiled. 10. Maintain clean surroundings when area is not contained by damp mopping or HEPA vacuuming surfaces.
Class IV (Includes Class III) 	1. Construct and complete critical barriers meeting NFPA 241 requirements including: Barriers must extend to the ceiling or, if ceiling tile is removed, to the deck above, and all penetrations through the barrier shall meet the appropriate fire rating requirements. 2. All (plastic or hard) barrier construction activities must be completed in a manner that prevents dust release. Plastic barriers must be effectively affixed to ground and ceiling and secure from movement or damage. Apply tape that will not leave a residue to seal gaps between barriers, ceiling, or floor. 3. Seal all penetrations in containment barriers, including floors and ceiling, using approved materials (UL schedule firestop if applicable for barrier type). 4. Containment units or environmental containment units (ECUs) approved for Class IV precautions in small areas totally contained by the unit and that has HEPA-filtered exhaust air. 5. Negative airflow pattern must be maintained from the entry point to the anteroom and into the construction area. The airflow must cascade from outside to inside the construction area. The entire construction area must remain negatively pressurized. 6. Maintain negative pressurization of the entire workspace by use of HEPA exhaust air systems directed outdoors. Exhaust discharged directly to the outdoors that is 25 feet or greater from entrances, air intakes and windows does not require HEPA-filtered air.	7. If exhaust is directed indoors, then the system must be HEPA filtered. Prior to start of work, HEPA filtration must be verified by particulate measurement as no less than 99.97% efficiency and must not alter or change airflow/pressure relationships in other areas. 8. Exhaust into shared or recirculating HVAC systems, or other shared exhaust systems (e.g., bathroom exhaust) is not acceptable. 9. Install device on exterior of work containment to continually monitor negative pressurization. To assure proper pressure is continuously maintained, it is recommended that the device(s) have a visual pressure indicator. 10. Worker clothing must be clean and free of visible dust before leaving the work area. HEPA vacuuming of clothing or use of cover suits is acceptable. 11. Workers must wear shoe covers prior to entry into the work area. Shoe covers must be changed prior to exiting the anteroom to the occupied space (non-work area). Damaged shoe covers must be immediately changed. 12. Consider collection of particulate data during work to monitor and ensure that contaminants do not enter the occupied spaces. Routine collection of particulate samples may be used to verify HEPA filtration efficiencies. 13. Air sampling may be required for Activity Type C work and is required for Activity Type D work lasting greater than 1 week in duration and performed in Groups 3 and 4 population.
Class V (Includes Class IV) 	1. Construct anteroom large enough for equipment staging, cart cleaning, workers. The anteroom must be constructed adjacent to entrance of construction work area. 2. Personnel will be required to always wear disposable coveralls to and from the anteroom when path of travel intersects areas of high-risk population groups. Coveralls must be stored in a clean, dust-free area.	

Not Applicable (Check for projects that are class I, II, and preventative maintenance (PM) ICRAs unless otherwise specified).

Table E – Surrounding Area Assessment: Complete for Class III, IV, and V ICRAs, excluding PMs

Unit Below:	Unit Above:	Unit Lateral:	Unit Behind:	Unit in Front:
Risk Group:	Risk Group:	Risk Group:	Risk Group:	Risk Group:
Contact:	Contact:	Contact:	Contact:	Contact:
Phone:	Phone:	Phone:	Phone:	Phone:
Additional Controls: <input type="checkbox"/> Noise <input type="checkbox"/> Vibration <input type="checkbox"/> Dust Control <input type="checkbox"/> Ventilation <input type="checkbox"/> Pressurization <input type="checkbox"/> Vertical Shafts <input type="checkbox"/> Elevator/Stairs Systems Impacted: <input type="checkbox"/> Data <input type="checkbox"/> Mechanical <input type="checkbox"/> Med Gases <input type="checkbox"/> Hot/Cold Water	Additional Controls: <input type="checkbox"/> Noise <input type="checkbox"/> Vibration <input type="checkbox"/> Dust Control <input type="checkbox"/> Ventilation <input type="checkbox"/> Pressurization <input type="checkbox"/> Vertical Shafts <input type="checkbox"/> Elevator/Stairs Systems Impacted: <input type="checkbox"/> Data <input type="checkbox"/> Mechanical <input type="checkbox"/> Med Gases <input type="checkbox"/> Hot/Cold Water	Additional Controls: <input type="checkbox"/> Noise <input type="checkbox"/> Vibration <input type="checkbox"/> Dust Control <input type="checkbox"/> Ventilation <input type="checkbox"/> Pressurization <input type="checkbox"/> Vertical Shafts <input type="checkbox"/> Elevator/Stairs Systems Impacted: <input type="checkbox"/> Data <input type="checkbox"/> Mechanical <input type="checkbox"/> Med Gases <input type="checkbox"/> Hot/Cold Water	Additional Controls: <input type="checkbox"/> Noise <input type="checkbox"/> Vibration <input type="checkbox"/> Dust Control <input type="checkbox"/> Ventilation <input type="checkbox"/> Pressurization <input type="checkbox"/> Vertical Shafts <input type="checkbox"/> Elevator/Stairs Systems Impacted: <input type="checkbox"/> Data <input type="checkbox"/> Mechanical <input type="checkbox"/> Med Gases <input type="checkbox"/> Hot/Cold Water	Additional Controls: <input type="checkbox"/> Noise <input type="checkbox"/> Vibration <input type="checkbox"/> Dust Control <input type="checkbox"/> Ventilation <input type="checkbox"/> Pressurization <input type="checkbox"/> Vertical Shafts <input type="checkbox"/> Elevator/Stairs Systems Impacted: <input type="checkbox"/> Data <input type="checkbox"/> Mechanical <input type="checkbox"/> Med Gases <input type="checkbox"/> Hot/Cold Water
Noise & Vibration Mitigation Strategies Use diamond drills instead of powder-actuated fasteners. Schedule noise-making periods with adjacent spaces. Use beam clamps instead of shot. Prefab where possible. Use tin snips to cut metal studs instead of using a chop saw. Install metal decking with vent tabs, then use cellular floor deck hangers. Consider compression style fittings instead of soldering, brazing, or welding. Wet core drill instead of dry core or percussion. Instead of jackhammering concrete, use wet diamond saws. Use HEPA vacuums instead of standard wet/dry vacuums. Use mechanical joining system sprinkler fittings instead of threaded. Where fumes are tolerated, use chemical adhesive remover (flooring glue) instead of mechanical. To remove flooring, consider abrasive blasting instead of using a floor scraper. Use electric sheers instead of reciprocating saw for ductwork cutting. Install exterior man/material lifts.				
Ventilation & Pressurization Mitigation Strategies HEPA to exterior. Install temporary ductwork. Utilize temporary HVAC equipment. Vacate the area. Install temporary partitions. Use carbon filtration to filter odors.				
Impact to Other Systems Mitigation Strategies Schedule outages. Provide temporary systems. Back-feed electricity or medical gases.				



PLEASE PUT THIS PAGE ON TOP WHEN
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ICRA 2.0 Infection Control Risk Assessment and Permit	Project Name:				
	Project Number:		Requested By:		
Project Manager (PM)		Phone		Original Project Start Date	
Contractor Performing Work		Phone		Project End Date	
Approving Authority (HEIP)		Phone			
Location of Work Activity					
<p>Please note that the signature below is approval of the work activity as described and assessed documented here. Should the scope of work change or the discovery of additional toxic or biological substances occur, STOP WORK and seek additional approval and guidance before proceeding.</p>					
Comments and/or Additional Information from PM or Contractor					
1. Type of Activity		3. Class of Precautions			
Type A: Non-Invasive			TYPE A	TYPE B	TYPE C
Type B: Small-scale, short duration		Group 1 Low	I	II	III
Type C: Large-scale, longer duration			II	III	IV
Type D: Major demolition, construction		Group 2 Medium	I	II	III
2. Patient Risk Area		Group 3 High	I	III	IV
Grp 1 - Low: Non-patient care area			III	IV	V
Grp 2 - Medium: Patient care support areas		Group 4 Highest	III	IV	V
Grp 3 - High: Patient care areas			IV	V	V
Grp 4 - Highest: Invasive, sterile, or highly compromised care					
Signatures of Approval					
Requester: (Design or Facilities)				Date:	
Permit Authorized By: (HEIP: Only needed for Class III, IV, or V)				Date:	(Permit Expires 90 Days from ICP Date):
Exceptions / Additions to this permit are noted below or by attached memoranda					
Date	Initials	Explanation:			