

## INFECTION CONTROL RISK ASSESSMENT MATRIX OF PRECAUTIONS FOR CONSTRUCTION & RENOVATION

### Step One:

Using the following table, *identify the...* [Type of Construction Project Activity \(Type A-D\)](#)

<i>TYPE A</i>	<b>Inspection and Non-Invasive Activities</b> Includes, but is not limited to: <ul style="list-style-type: none"> <li>▪ removal of ceiling tiles for visual inspection limited to 1 tile per 50 square feet</li> <li>▪ painting (but not sanding)</li> <li>▪ wall covering, electrical trim work, minor plumbing, and activities which do not generate dust or require cutting of walls or access to ceilings other than for visual inspection</li> </ul>
<i>TYPE B</i>	<b>Small scale, short duration activities which create minimal dust</b> Includes, but is not limited to: <ul style="list-style-type: none"> <li>▪ installation of telephone and computer cabling</li> <li>▪ access to chase spaces</li> <li>▪ cutting of walls or ceiling where dust migration can be controlled</li> </ul>
<i>TYPE C</i>	<b>Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies</b> Includes, but is not limited to: <ul style="list-style-type: none"> <li>▪ sanding of walls for painting or wall covering</li> <li>▪ removal of floor coverings, ceiling tiles and casework</li> <li>▪ new wall construction</li> <li>▪ minor duct work or electrical work above ceilings</li> <li>▪ major cabling activities</li> <li>▪ any activity which cannot be completed within a single work shift</li> </ul>
<i>TYPE D</i>	<b>Major demolition and construction projects</b> Includes, but is not limited to: <ul style="list-style-type: none"> <li>▪ activities which require consecutive work shifts</li> <li>▪ requires heavy demolition or removal of a complete cabling system</li> <li>▪ new construction</li> </ul>

### STEP 1:

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Steps 4-14: Adapted with permission Fairview University Medical Center, Minneapolis MN

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## Step Two:

Using the following table, *identify the...Patient Risk Groups* that will be affected.  
If more than one risk group will be affected, select the higher risk group:

Low Risk	Medium Risk	High Risk	Highest Risk
<ul style="list-style-type: none"> <li>Office areas</li> </ul>	<ul style="list-style-type: none"> <li>CBOCs</li> <li>Food Services</li> <li>Endoscopy</li> <li>Outpatient Clinics (except oncology and radiation oncology)</li> <li>Physical Therapy</li> <li>Radiology/MRI</li> <li>Nuclear Medicine</li> </ul>	<ul style="list-style-type: none"> <li>Ambulatory Surgery</li> <li>Bronchoscopy</li> <li>Community Living Centers</li> <li>Emergency Room</li> <li>Hemodialysis</li> <li>Laboratory &amp; Pathology</li> <li>Logistics Clean Supply</li> <li>Medical Surgical Units</li> <li>Pharmacy</li> <li>Psychiatry/Mental Health</li> <li>Post Anesthesia Care Unit</li> </ul>	<ul style="list-style-type: none"> <li>Cardiac Cath Lab</li> <li>Interventional Radiology</li> <li>Intensive Care Units (SICU/MICU)</li> <li>Negative Pressure Isolation Rooms</li> <li>Oncology/Radiation Oncology Clinic</li> <li>Operating Rooms</li> <li>Sterile Supply</li> </ul>

## Step 2:

## Step Three: Match the...

**Patient Risk Group** (*Low, Medium, High, Highest*) with the planned **Construction Project Type** (*A, B, C, D*) on the following matrix, to find the **Class of Precautions** (*I, II, III or IV*) or level of infection control activities required. **Class I-IV or Color-Coded Precautions** are delineated on the following page.

IC Matrix - Class of Precautions: Construction Project by Patient Risk

Patient Risk Group	Construction Project Type			
	TYPE A	TYPE B	TYPE C	TYPE D
LOW Risk Group	I	II	II	III/IV
MEDIUM Risk Group	I	II	III	IV
HIGH Risk Group	I	II	III/IV	IV
HIGHEST Risk Group	II	III/IV	III/IV	IV

Note: **Infection Control approval will be required when the Construction Activity and Risk Level indicate that Class III or Class IV control procedures are necessary.**

## Step 3:

Description of Required Infection Control Precautions by Class during Construction Project upon Completion of Project

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CLASS I	<ol style="list-style-type: none"> <li>1. Execute work by methods to minimize raising dust from construction operations.</li> <li>2. Immediately replace a ceiling tile displaced for visual inspection.</li> </ol>	
CLASS II	<ol style="list-style-type: none"> <li>1. Provide active means to prevent airborne dust from dispersing into atmosphere.</li> <li>2. Water mist work surfaces to control dust while cutting.</li> <li>3. Seal unused doors with duct tape.</li> <li>4. Block off and seal air vents.</li> <li>5. Place dust mat at entrance and exit of work area.</li> <li>6. Remove or isolate HVAC system in areas where work is being performed.</li> </ol>	<ol style="list-style-type: none"> <li>7. Wipe work surfaces with disinfectant.</li> <li>8. Contain construction waste before transport in tightly covered containers.</li> <li>9. Wet mop and/or vacuum with HEPA filtered vacuum before leaving work area.</li> <li>10. Remove isolation of HVAC system in areas where work is being performed.</li> </ol>
CLASS III	<ol style="list-style-type: none"> <li>1. Remove or Isolate HVAC system in area where work is being done to prevent contamination of duct system.</li> <li>2. Complete all critical barriers <i>i.e. sheetrock, plywood, plastic, to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit)</i> before construction begins.</li> <li>3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.</li> <li>4. Contain construction waste before transport in tightly covered containers.</li> <li>5. Cover transport receptacles or carts. Tape covering unless solid lid.</li> </ol>	<ol style="list-style-type: none"> <li>6. Do not remove barriers from work area until completed project is inspected by the owner's Safety Department and Infection Control Department and thoroughly cleaned by the owner's Environmental Services Department.</li> <li>7. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.</li> <li>8. Vacuum work area with HEPA filtered vacuums.</li> <li>9. Wet mop area with disinfectant.</li> <li>10. Remove isolation of HVAC system in areas where work is being performed.</li> </ol>
CLASS IV	<ol style="list-style-type: none"> <li>1. Isolate HVAC system in area where work is being done to prevent contamination of duct system.</li> <li>2. Complete all critical barriers <i>i.e. sheetrock, plywood, plastic, to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit)</i> before construction begins.</li> <li>3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.</li> <li>4. Seal holes, pipes, conduits, and punctures appropriately.</li> <li>5. Construct anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site or they can wear cloth or paper coveralls that are removed each time they leave the work site.</li> <li>6. All personnel entering work site are required to wear shoe covers. Shoe covers must be changed each time the worker exits the work area.</li> <li>7. Do not remove barriers from work area until completed project is inspected by the owner's Safety Department and Infection Control Department and thoroughly cleaned by the owner's Environmental Services Department.</li> </ol>	<ol style="list-style-type: none"> <li>8. Remove barrier material carefully to minimize spreading of dirt and debris associated with construction.</li> <li>9. Contain construction waste before transport in tightly covered containers.</li> <li>10. Cover transport receptacles or carts. Tape covering unless solid lid.</li> <li>11. Vacuum work area with HEPA filtered vacuums.</li> <li>12. Wet mop area with disinfectant.</li> <li>13. Remove isolation of HVAC system in areas where work is being performed.</li> </ol> <p>Steps 1-3: Adapted with permission V Kennedy, B Barnard, St. Luke Episcopal Hospital, Houston TX; C Fine, CA  Steps 4-13: Adapted with permission Fairview University Medical Center, Minneapolis MN  Forms modified and provided courtesy of B Bartley, ECSI Inc 2002</p>

**Step 4: Identify the areas surrounding the project area, assessing potential impact**

Unit Above	Unit Below	Lateral (L)	Lateral (R)	Front	Behind
LOW	LOW	LOW	LOW	LOW	LOW
Risk Group	Risk Group	Risk Group	Risk Group	Risk Group	Risk Group

**Step 5: Identify activity and site of activity (e.g., patient rooms, medication room), etc.**

**Step 6: Identify issues related to: ventilation, plumbing, electrical in terms of the occurrence of probable outages.**

**Step 7: Identify containment measures, using prior assessment. What type of barriers? (e.g., solids wall barriers); Will HEPA filtration be needed?**

**(Note: Renovation/construction area shall be isolated from the occupied areas during construction and shall be negative with respect to surrounding areas)**

**Step 8: Consider potential risk of water damage or modifications to potable water systems. Is there a risk due to compromising structural integrity? (e.g., wall, ceiling, roof). If modifications, what actions will be taken before and after construction for prevention of waterborne pathogens?**

**Step 9: Work hours: Can or will the work be done during non-patient care hours?**

**Step 10: Do plans allow for adequate number of isolation/negative airflow rooms?**

**Step 11: Do the plans allow for the required number & type of hand washing sinks?**

**Step 12: Does the infection control staff agree with the minimum number of sinks for this project? (Verify against AIA Guidelines for types and area)**

**Step 13: Does the infection control staff agree with the plans relative to clean and soiled utility rooms?**

**Step 14: Plan to discuss the following containment issues with project team (e.g., traffic flow, housekeeping, and debris removal (how and when).**

**Step 15: Would the construction workers have face to face contact with a suspected or confirmed TB patient?**

*Appendix: Identify and communicate the responsibility for project monitoring that includes infection control concerns and risks. The ICRA may be modified throughout the project.*

*Revisions must be communicated to the Project Manager.*

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Infection Control Construction Permit							
					Permit No:		
Location of Construction:					Project Start Date:		
Project Coordinator:					Estimated Duration:		
Contractor Performing Work:					Permit Expiration Date:		
Supervisor:					Telephone:		
YES	NO	CONSTRUCTION ACTIVITY			YES	NO	INFECTION CONTROL RISK GROUP
		TYPE A: Inspection, non-invasive activity					GROUP 1: Low Risk
		TYPE B: Small scale, short duration, moderate to high levels					GROUP 2: Medium Risk
		TYPE C: Activity generates moderate to high levels of dust, requires greater 1-work shift for completion					GROUP 3: Medium/High Risk
		TYPE D: Major duration and construction activities requiring consecutive work shifts					GROUP 4: Highest Risk
CLASS I		1. Execute work by methods to minimize raising dust from construction operations. 2. Immediately replace any ceiling tile displaced for visual inspection.			3. Minor Demolition for Remodeling.		
CLASS II		1. Provides active means to prevent air-borne dust from dispersing into atmosphere. 2. Water mist work surfaces to control dust while cutting. 3. Seal unused doors with duct tape. 4. Block off and seal air vents. 5. Wipe surfaces with disinfectant.			6. Contain construction waste before transport in tightly covered containers. 7. Wet mop and/or vacuum with HEPA filtered vacuum before leaving work area. 8. Place dust mat at entrance and exit of work area. 9. Remove or isolate HVAC system in areas where work is being performed.		
CLASS III		1. Obtain infection control permit before construction begins. 2. Isolate HVAC system in area where work is being done to prevent contamination of the duct system. 3. Complete all critical barriers or implement control cube method before construction begins. 4. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.			6. Vacuum work with HEPA filtered vacuums. 7. Wet mop with disinfectant. 8. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 9. Contain construction waste before transport in tightly covered containers.		
Date		5. Do not remove barriers from work area until complete project is thoroughly cleaned by Environmental Services Dept.			10. Cover transport receptacles or carts. Tape covering.		
Initial					11. Remove or isolate HVAC system in areas where work is being performed.		
Class IV		1. Obtain infection control permit before construction begins. 2. Isolate HVAC system in area where work is being done to prevent contamination of duct system. 3. Complete all critical barriers or implement control cube method before construction begins. 4. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. 5. Seal holes, pipes, conduits, and punctures appropriately. 6. Construct anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site or they can wear cloth or paper coveralls that are removed each time they leave the work site.			7. All personnel entering work site are required to wear shoe covers. 8. Do not remove barriers from work area until completed project is thoroughly cleaned by the Environmental Service Dept. 9. Vacuum work area with HEPA filtered vacuums. 10. Wet mop with disinfectant. 11. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 12. Contain construction waste before transport in tightly covered containers. 13. Cover transport receptacles or carts. Tape covering. 14. Remove or isolate HVAC system in areas where is being done.		
Date							
Initial							
Additional Requirements:							
_____ Date Initials					_____ Exceptions/Additions to this permit Date Initials are noted by attached memoranda		
Permit Request By:					Permit Authorized By:		
Date: 31 Jul 2015					Date		

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## Construction Activities:

The following projects **do not require** completion of the Infection Control risk assessment permit:

1. Paint and wallpaper in business offices and non-patient areas.
2. Paint in patient room if closed for painting and less than 9 ft<sup>2</sup> of wall needs patching.
3. Installation of soap dispenser/needle box/paper towel holder in patient room.
4. Repair of window blind.
5. Ceiling tile replacement in business offices and non-patient areas involving less than 50% of the total square footage of room.
6. Ceiling tile replacement of less than five 2 X 2 tiles in patient's room if patient is out of room & clean up can be accomplished before patient return.
7. Minimum repair of nurse call system/TV/Bed/Telephone.
8. Check or replace electric outlet.
9. Replace light bulb.
10. Unstop sink/commode with no water on floor.
11. Unstop commode when water on floor requires maintenance to have Housekeeping clean area immediately.
12. Repair medical gas outlet. (Front Body)
13. Air balance readings.
14. Check air-conditioning.