

## Infection Control Risk Assessment 2.0

### Matrix of Precautions for Construction, Renovation and Operations

**Table 5 - Minimum Required Infection Control Precautions by Class | Before and During Work Activity**

<b>Class of Precautions</b>	<b>Mitigation Activities (Performed Before and During Work Activity)</b>
<b>Class I</b>	<ol style="list-style-type: none"> <li>1. Perform noninvasive work activity as to not block or interrupt patient care.</li> <li>2. Perform noninvasive work activities in areas that are not directly occupied with patients.</li> <li>3. Perform noninvasive work activity in a manner that does not create dust.</li> <li>4. Immediately replace any displaced ceiling tile before leaving the area and/or at end of noninvasive work activity.</li> </ol>
<b>Class II</b>	<ol style="list-style-type: none"> <li>1. Perform only limited dust work and/or activities designed for basic facilities and engineering work.</li> <li>2. Perform limited dust and invasive work following standing precautions procedures approved by the organization.</li> <li>3. This Class of Precautions must never be used for construction or renovation activities.</li> </ol>
<b>Class III</b>	<ol style="list-style-type: none"> <li>1. Provide active means to prevent airborne dust dispersion into the occupied areas.</li> <li>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.</li> <li>3. Remove or isolate return air diffusers to avoid dust from entering the HVAC system.</li> <li>4. Remove or isolate the supply air diffusers to avoid positive pressurization of the space.</li> <li>5. If work area is contained, then it must be neutrally to negatively pressurized at all times.</li> <li>6. Seal all doors with tape that will not leave residue.</li> <li>7. Contain all trash and debris in the work area.</li> <li>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.</li> <li>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.</li> <li>10. Maintain clean surroundings when area is not contained by damp mopping or HEPA vacuuming surfaces.</li> </ol>
<b>Class IV</b>	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>3. Seal all penetrations in containment barriers, including floors and ceiling, using approved materials (UL schedule firestop if applicable for barrier type).</li> <li>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.</li> <li>5. Remove or isolate return air diffusers to avoid dust entering the HVAC system.</li> <li>6. Remove or isolate the supply air diffusers to avoid positive pressurization of the space.</li> <li>7. 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.</li> <li>8. 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.</li> <li>9. 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.</li> <li>10. Exhaust into shared or recirculating HVAC systems, or other shared exhaust systems (e.g., bathroom exhaust) is not acceptable.</li> <li>11. 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.</li> <li>12. Contain all trash and debris in the work area.</li> </ol>

## Infection Control Risk Assessment 2.0

### Matrix of Precautions for Construction, Renovation and Operations

	<ol style="list-style-type: none"> <li>13. 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.</li> <li>14. 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.</li> <li>15. 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.</li> <li>16. 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.</li> <li>17. 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.</li> </ol>
<b>Class V</b>	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>3. Seal all penetrations in containment barriers, anteroom barriers, including floors and ceiling using approved materials (UL schedule firestop if applicable for barrier type).</li> <li>4. Construct anteroom large enough for equipment staging, cart cleaning, workers. The anteroom must be constructed adjacent to entrance of construction work area.</li> <li>5. Personnel will be required to wear disposable coveralls at all times during Class V work activities. Disposable coveralls must be removed before leaving the anteroom.</li> <li>6. Remove or isolate return air diffusers to avoid dust entering the HVAC system.</li> <li>7. Remove or isolate the supply air diffusers to avoid positive pressurization of the space.</li> <li>8. 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.</li> <li>9. Maintain negative pressurization of the entire workspace using 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.</li> <li>10. 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.</li> <li>11. Exhaust into shared or recirculating HVAC systems, or other shared exhaust systems (bathroom exhaust) is <u>not acceptable</u>.</li> <li>12. 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.</li> <li>13. Contain all trash and debris in the work area.</li> <li>14. 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.</li> <li>15. Worker clothing must be clean and free of visible dust before leaving the work area anteroom.</li> <li>16. 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.</li> <li>17. 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.</li> <li>18. 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.</li> </ol>

## Infection Control Risk Assessment 2.0

### Matrix of Precautions for Construction, Renovation and Operations

**Table 6 - Minimum Required Infection Control Precautions | Upon Completion of Work Activity**

Class of Precautions	Mitigation Activities (Performed upon Completion of Work Activity)
<b>Classes I, II and III</b>	<p>Cleaning:</p> <ol style="list-style-type: none"> <li>1. Clean work areas including all environmental surfaces, high horizontal surfaces and flooring materials.</li> <li>2. Check all supply and return air registers for dust accumulation on upper surfaces as well as air diffuser surfaces.</li> </ol> <p>HVAC Systems:</p> <ol style="list-style-type: none"> <li>1. Remove isolation of HVAC system in areas where work is being performed. Verify that HVAC systems are clean and operational.</li> <li>2. Verify the HVAC systems meet original airflow and air exchange design specifications.</li> </ol>
<b>Classes III, IV and V</b>	<p>Class III (Type C Activities only), IV, and V precautions require inspection and documentation for downgraded ICRA precautions.</p> <p>Construction areas must be inspected by an infection preventionist or designee and engineering representative for discontinuation or downgrading of ICRA precautions.</p> <p>Work Area Cleaning:</p> <ol style="list-style-type: none"> <li>1. Clean work areas including all environmental surfaces, high horizontal surfaces and flooring materials.</li> <li>2. Check all supply and return air registers for dust accumulation on upper surfaces as well as air diffuser surfaces.</li> </ol> <p>Removal of Critical Barriers:</p> <ol style="list-style-type: none"> <li>1. Critical barriers must remain in place during all work involving drywall removal, creation of dust and activities beyond simple touch-up work. The barrier may NOT be removed until a work area cleaning has been performed.</li> <li>2. All (plastic or hard) barrier removal activities must be completed in a manner that prevents dust release. Use the following precautions when removing hard barriers: <ol style="list-style-type: none"> <li>i. Carefully remove screws and painter tape.</li> <li>ii. If dust will be generated during screw removal, use hand-held HEPA vacuum.</li> <li>iii. Drywall cutting is prohibited during removal process.</li> <li>iv. Clean all stud tracks with HEPA vacuum before removing outer hard barrier.</li> <li>v. Use a plastic barrier to enclose area if dust could be generated.</li> </ol> </li> </ol> <p>Negative Air Requirements:</p> <ol style="list-style-type: none"> <li>1. The use of negative air must be designed to remove contaminants from the work area.</li> <li>2. Negative air devices must remain operational at all times and in place for a period after completion of dust creating activities to remove contaminants from the work area and before removal of critical barriers.</li> </ol> <p>HVAC systems:</p> <ol style="list-style-type: none"> <li>1. Upon removal of critical barriers, remove isolation of HVAC system in areas where work is being performed.</li> <li>2. Verify that HVAC systems are clean and operational.</li> <li>3. Verify the HVAC systems meets original airflow and air exchange design specifications.</li> </ol>

©2022 The American Society for Health Care Engineering of the American Hospital Association Disclaimer: This document is provided by ASHE as a service to its members. The information provided may not apply to a reader's specific situation and is not a substitute for application of the reader's own independent judgment or the advice of a competent professional. ASHE does not make any guaranty or warranty as to the accuracy or completeness of any information contained in this document. ASHE and the authors disclaim liability for personal injury, property damage, or other damages of any kind, whether special, indirect, consequential, or compensatory, that may result directly or indirectly from use of or reliance on this document.