# Section 01 35 33 – Infection Control Procedures

## Part 1 - General

1.1 RELATED DOCUMENTS

A. All of the Contract Documents, as listed on the Table of Contents and including General and Supplementary Conditions and Division 1, General Requirements, shall be included in, and made part of, this Section.

1.2 SUMMARY

A. This Section contains infection control procedures for Work, performed within all areas of the facility.

B. Related Sections: The following Sections contain requirements that relate to this Section:
1. Section 01 11 00 “Summary of work.”
2. Section 01 21 00 “Allowances.”
3. Section 01 31 00 “Project Management and Coordination.”
4. Section 01 32 00 “Construction Progress Documentation.”
5. Section 01 33 00 Section “Submittal Procedures.”
6. Section 01 35 13.19 Section “Special Project Procedures for Healthcare Facilities.”
7. Section 01 50 00 “Temporary Facilities and Controls.”
8. Section 01 73 00 “Execution” for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
9. Section 02 41 19 “Selective Demolition.”
10. Section 02 82.13 “Asbestos Abatement.”
11. Section 31 20 00 “Earth Moving.”

C. Products installed and furnished under this Section include, but are not limited to the following Sections:
1. Section 06 10 53 “Miscellaneous Rough Carpentry.”
2. Section 09 29 00 “Gypsum Board.”
3. Section 09 91 23 “Interior Painting.”
4. Section 23 31 00.”Sheet Metal Work and Accessories.”

1.3 PROJECT CLASSIFICATION

A. Step 1.

Construction Activity Type comes from the table below. Construction Activity Type is defined by the amount of dust that is generated, the duration of the activity, and the involvement with HVAC systems.

B. Step 2.

| | |
|---|---|
| TYPE A | Inspection and Non-invasive Activities Includes, but is not limited to:<br>▪ removal of ceiling tiles for visual inspection limited to 1 tile per 50 square feet<br>▪ painting (but not sanding)<br>▪ 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. |
| TYPE B | Small scale, short duration activities which create minimal dust includes, but is not limited to:<br>▪ installing telephone or computer cabling<br>▪ access chase spaces<br>▪ cutting walls or ceilings where dust migration can be controlled |
| TYPE C | Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building component or assembly includes, but is not limited to:<br>▪ sanding walls for painting or wallcovering<br>▪ removing floorcoverings, ceiling tiles and casework<br>▪ new wall construction<br>▪ minor ductwork or electrical work above ceilings<br>▪ major cabling activities<br>▪ any activity that cannot be completed within a single work shift |
| TYPE D | Major demolition and construction projects Includes, but is not limited to:<br>▪ activities which require consecutive work shifts<br>▪ requires heavy demolition or removal of a complete cabling system<br>▪ new construction |

Select Infection Control Risk Group from the table below. Infection Control Risk Groups are based on project location and occupancy. As in outpatient areas, day-treatment only areas, etc., work should be done after hours since these areas have limited times when patients are seen.

| **DEFINITION OF INFECTION CONTROL RISK AREA/LOCATION**<br>Level of Risk by Hospital Location | | | |
|---|---|---|---|
| Level 1<br>Low Risk | Level 2<br>Medium Risk | Level 3<br>High Risk | Level 4<br>Highest Risk |
| ▪ Office areas not communicating with patient care areas | ▪ Admitting<br>▪ Cafeteria<br>▪ Echocardiography<br>▪ Endoscopy<br>▪ Nuclear Medicine<br>▪ Patient areas not specified for high or highest risk<br>▪ Public corridors where patients, patient supplies and linen are<br>▪ Radiology/MRI<br>▪ Rehab Therapy (except Burn)<br>▪ Respiratory Therapy | ▪ CCU<br>▪ Emergency Room<br>▪ Labor & Delivery<br>▪ Maternal Child Unit<br>▪ Laboratories (specimen)<br>▪ Newborn Nursery<br>▪ Outpatient Surgery<br>▪ Pediatrics<br>▪ Pharmacy<br>▪ Post Anesthesia Care Unit<br>▪ Surgical Units<br>▪ Linen Room | ▪ Burn Unit and Burn Rehab<br>▪ Cardiac Cath Lab<br>▪ Central Sterile Supply<br>▪ Intensive Care Units<br>▪ Medical Units<br>▪ Negative pressure isolation rooms<br>▪ Oncology Clinic<br>▪ ORs including c-section rooms<br>▪ Dialysis Unit<br>▪ Outpatient treatment rooms where insertion procedures are performed |

C. Step 3.

Using the Construction Activity Type and the Infection Control Risk Group selected from the tables above, use the matrix below to determine Construction Classification. Construction Classification determines the procedures to be followed during construction and removal projects.

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

| | | Construction Project Type | | | |
|---|---|---|---|---|---|
| **Patient Risk Group** | | TYPE A | TYPE B | TYPE C | TYPE D |
| Level 1 | LOW Risk Group | **I** | **II** | **II** | **III/IV** |
| Level 2 | MEDIUM Risk Group | **I** | **II** | **III** | **IV** |
| Level 3 | HIGH Risk Group | **I** | **II** | **III/IV** | **IV** |
| Level 4 | 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

D. Step 4.

Implement the appropriate Infection Control Construction Guideline based on the Project classification selected from the Construction Activity Matrix listed above in Step Three. Infection Control Construction Guidelines are procedures to control release of airborne contaminants resulting from construction, demolition, or renovation activities.

| INFECTION CONTROL CONSTRUCTION GUIDELINES | |
|---|---|
| **CLASS I** | ▪ Execute work by methods to minimize raising dust from construction operations.<br>▪ Replace any ceiling tile displaced for visual inspection as soon as possible. |
| **CLASS II** | ▪ Isolate HVAC system in areas where work is being performed.<br>▪ Provide active means to prevent airborne dust from dispersing into atmosphere.<br>▪ Seal unused doors with tape.<br>▪ Maintain barrier integrity.<br>▪ Close doors and install project sign.<br>▪ Contain construction waste before transport in tightly covered containers.<br>▪ Wet mop and/or vacuum with HEPA filtered vacuum before leaving work area daily.<br>▪ Place dust mat at entrance and exit of work area and replace or clean when no longer effective.<br>▪ Establish traffic patterns that minimize exposure to patient care areas.<br>▪ Quickly dry water spills.<br>▪ Wipe casework and horizontal surfaces at completion of project. |
| **CLASS III** | ▪ Isolate HVAC system in area where work is being done to prevent contamination of the duct system.<br>▪ Place dust-mat at entrance and exit of work area and replace or clean when no longer effective.<br>▪ Maintain negative air pressure within work site utilizing HEPA filtered ventilation units or other methods.<br>▪ Complete all construction barriers before construction begins. Request an inspection from the Owner prior to construction.<br>▪ Maintain barrier integrity.<br>▪ Close doors and install project sign.<br>▪ Wet mop or HEPA vacuum twice per 8-hour period of construction activity for as required in order minimizing tracking.<br>▪ Contain construction waste before transport in tightly covered containers.<br>▪ Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.<br>▪ Barrier material should be wet wiped, HEPA vacuumed or water misted prior to removal.<br>▪ Establish traffic patterns that minimize exposure to patient care areas.<br>▪ Quickly dry water spills.<br>▪ Wipe casework and horizontal surfaces at completion of project.<br>▪ Do not remove barriers from work area until completed project is thoroughly cleaned. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.<br>▪ Barrier material should be wet wiped, HEPA vacuumed or water misted prior to removal. Request an inspection form the Owner prior to construction. |
| **CLASS IV** | ▪ Isolate HVAC System in area where work is being done prevent contamination of duct system.<br>▪ Complete all construction barriers before construction begins. Request an inspection from the Owner prior to construction.<br>▪ Maintain negative air pressure within work site utilizing HEPA filtered ventilation units or other methods to maintain negative pressure.<br>▪ Seal holes, pipes, conduits, and punctures to prevent dust migration.<br>▪ Construct anteroom and require all personnel to pass through this room. Wet mop or HEPA vacuum the anteroom twice per 8-hour period of construction activity or as required in order minimizing tracking.<br>▪ Wet mop or HEPA vacuum the construction interior area once per 8-hour shift, minimum.<br>▪ During demolition, dust producing work or work in the ceiling, disposable shoes and coveralls are to be worn and removed in the anteroom when leaving work area.<br>▪ Contain construction waste before transport in tightly covered containers.<br>▪ Place dust-mat at entrance and exit of work area and replace or clean when no longer effective.<br>▪ Keep work area broom clean and remove debris daily.<br>▪ Wet mop hard surface areas with disinfectant at completion of project. HEPA vacuum carpeted surfaces at completion of project.<br>▪ Maintain barrier integrity.<br>▪ Close doors and install project sign.<br>▪ Establish traffic patterns that minimize exposure to patient care areas.<br>▪ Quickly dry water spills.<br>▪ Wipe casework and horizontal surfaces at completion of project. |

| HCGH DESCRIPTION OF REQUIRED INFECTION CONTROL PRECAUTIONS BY CLASS | | |
|---|---|---|
| | **During Construction Project** | **Upon Completion of Project** |
| **CLASS I** | ▪ Execute work by methods to minimize raising dust from construction operations.<br>▪ Immediately replace a ceiling tile displaced for visual inspection | ▪ Clean work area upon completion of task. |
| **CLASS II** | ▪ Provide active means to prevent airborne dust from dispersing into atmosphere.<br>▪ Water mist work surfaces to control dust while cutting.<br>▪ Seal unused doors with duct tape.<br>▪ Block off and seal air vents.<br>▪ Place dust mat at entrance and exit of work area<br>▪ Remove or isolate HVAC system in areas where work is being performed. | ▪ Wipe work surfaces with disinfectant.<br>▪ Contain construction waste before transport in tightly covered containers.<br>▪ Wet mop and/or vacuum with HEPA filtered vacuum before leaving work area.<br>▪ Remove isolation of HVAC system in areas where work is being performed. |
| **CLASS III** | ▪ Remove or Isolate HVAC system in area where work is being done to prevent contamination of duct system.<br>▪ Complete all critical barriers 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) before construction begins.<br>▪ Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.<br>▪ Contain construction waste before transport in tightly covered containers.<br>▪ Cover transport receptacles or carts. Tape covering unless solid lid. | ▪ 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.<br>▪ Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.<br>▪ Vacuum work area with HEPA filtered vacuums.<br>▪ Wet mop area with disinfectant.<br>▪ Remove isolation of HVAC system in areas where work is being performed. |
| **CLASS IV** | ▪ Isolate HVAC system in area where work is being done to prevent contamination of duct system.<br>▪ Complete all critical barriers 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) before construction begins.<br>▪ Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.<br>▪ Seal holes, pipes, conduits, and punctures.<br>▪ 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 work site.<br>▪ All personnel entering work site are required to wear shoe covers. Shoe covers must be changed each time the worker exits the work area. *<br>▪ 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 Dept. | ▪ Remove barrier material carefully to minimize spreading of dirt and debris associated with construction.<br>▪ Contain construction waste before transport in tightly covered containers.<br>▪ Cover transport receptacles or carts. Tape covering unless solid lid<br>▪ Vacuum work area with HEPA filtered vacuums.<br>▪ Wet mop area with disinfectant.<br>▪ Remove isolation of HVAC system in areas where work is being performed. |

* Worksite garb: Contractor personnel clothing should be free of loose soil and debris before leaving the construction area. If protective apparel is not worn, a HEPA-filtered vacuum should be used to remove dust from clothing before leaving the barricade. Personal protective equipment (e.g., face shields, gloves, respirators) are worn as appropriate. Contractors entering invasive procedure areas should be provided with disposable jump suits and head and shoe coverings. Protective clothing should be removed before exiting the work area. Tools and equipment should be damp wiped before entry and exit from the work areas.

1.3 PROJECT CLASSIFICATION (continued)

E. Step 5.
Identify the areas surrounding the project area, assessing potential impact

F. Step 6.
Identify specific site of activity e.g., patient rooms, medication room, etc. See above.

G. Step 7.
Identify issues related to: ventilation, plumbing, electrical in terms of the occurrence of probable outages.

H. Step 8.
Identify containment measures, using prior assessment. What types of barriers?
(e.g., solid wall barriers); Will HEPA filtration be required?

I. Step 9.
Consider potential risk of water damage. Is there a risk due to compromising structural integrity?
(e.g., wall, ceiling, roof)

J. Step 10.
Work hours: Can or will the work be done during non-patient care hours?

K. Step 11.
Do plans allow for adequate number of isolation/negative airflow rooms? N/A

L. Step 12.
Do the plans allow for the required number & type of hand washing sinks? Yes

M. Step 13.
Does the infection control staff agree with the minimum number of sinks for this project? (Verify against AIA Guidelines for types and area)

N. Step 14.
Does the infection control staff agree with the plans relative to clean and soiled utility rooms? N/A

O. Step 15.
Plan to discuss the following containment issues with the project team. E.g., traffic flow, housekeeping, debris removal (how and when)

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.

## 1.4 SUBMITTALS

Product Data: Portable HEPA filtered air-handling equipment.

Schedule: Submit schedule indicating proposed sequence of operations for erection of construction site barriers and control measures to the Owner for review prior to start of Work.

Shop Drawings: For all control measures required. Show all containment assembly areas, methods, exhaust locations, and equipment.

## 1.5 QUALTIY ASSURANCE

General: All phases of barrier erection, removal, or alteration may be monitored by the Owner by use of smoke tests, Baulin Tube device, and/or negative pressure alarm devices to ensure continuous negative air pressure occurring within the Work area.

Reports: Owner will provide a "Check List" sheet, which outlines work requirements. Contractor will review this document and enter the date started and completed. Maintain a current, up-to-date report for review by the Owner. When project is completed, provide completed copy to the Owner. Retain original in project file and turn over with as-built drawings.

Installer Qualifications: Engage an experienced installer to perform work of this Section.

Pre-Construction Conference: Before starting installation of control devices, conduct a pre-construction conference and attend all orientation and training sessions as required by the Owner. The CSC must be invited to attend this meeting.

## 1.6 PRODUCTS

Adhesive Walk-Off Mats: 3M, St. Paul, MN 55144 or approved equal. Provide minimum size mats of 24 inches x 36 inches

Exhaust Hoses: Federal Hose Mtg. Co., Painsville, OH 44077 or approved equal. Heavy duty flexible steel reinforced, Ventilator Blower Hose.

Filters: Throwaway type fiberglass filters, 1 inch deep, up to 350 fpm rated velocity, 0.04 inch water gauge initial resistance, 72% average resistance, and classified as UL900 Class 2.

Fine Filtration Portable Vacuums: Nilfisk of America, Inc., Malvern, PA or approved equal.

HEPA-Filtered Ventilation Units: HPA Aire, Model PAS 2000 HC or Model PAS 1000 HC equipped air filtration units or equivalent. Provide HEPA filter, primary and secondary filters.

HEPA-Filter Drill Attachment: Milwaukee M12tm Hammervactm Universal Dust Extractor Kit 2306-22 at: http://www.milwaukeetool.com/power-tools/cordless/2306-22.

Negative Air Indicator: Molded Plastic Manometer, Dwyer Instruments, Inc., P.O. Box 373, Michigan City, Indiana 46361, (219) 879-8000, www.dwyer-inst.com, model Mark II, Model No. 25 Inclined-vertical Manometer.

Negative Air Indicator: Lamiflow Airflow Monitor models LN-102, Lamiflow Air Systems, Inc., 3286 Balsamridge, Cincinnati, OH 45239, (800) 554-6221 www.lamiflowtech.com

Portable Work Enclosures:  Kontrol Kube - Fiberlock Technologies, Inc. or approved equal

Zip-Up Door System:  Protective Products, Inc. or approved equal

Portable Work Enclosures:  Mintie Technologies, Inc., www.mintie.com, or approved equal

Portable Work Enclosures:  Zip Wall LLC, Cambridge, Mass., or approved equal

# Part 2 – Execution

2.1 PREPARATION

A. Contractor will notify the Owner of planned work and obtain approval prior to start of work by submitting an Outage.

2.2 ISOLATION

A. Install highly visible signage, with barricades when warranted, indicating area is closed to all but authorized construction personnel.

B. Construction activities causing disturbances of existing dust, or creating new dust, will be conducted in tight enclosures that cut off flow of particles into adjacent areas.

C. Where possible, utilize building walls and doors for containment. All doors, except construction access doors, should be closed and sealed with duct tape to prevent dust and debris from escaping.

D. Seal all HVAC supply, return, and sometimes the exhaust grilles, registers, and ductwork to ensure that room air is not being circulated from the construction area to the Hospital ventilation system. The Contractor is only permitted to close or open supply, return, or exhaust dampers, as directed by the Owner. The commissioning authority will accept temporary capping of, and subsequent removal of, capping. As construction progresses, ensure that exhaust air ductwork remain closed and sealed or properly filtered (see ventilation).

E. Construction, demolition, or reconstruction not capable or containment utilizing, existing building walls and doors, will use one of the following methods of isolation:

1. Airtight plastic barriers extending from floor to floor above, or ceiling tiles if not removed. Plastic barrier seams will be sealed with duct tape to prevent dust and debris from escaping. It should be fire retardant polyethylene sheet plastic goods (antistatic as warranted), 6 mil minimum thickness, with minimum width of 5 cm (2 inch) heavy duty cloth duct tape, sealing all junctions and seams. Provide all necessary support and bracing to prevent collapse or failure of barrier systems.

2. Portable dust containment units with polyethylene pulled tight against floor and ceiling.

3. Install, deck to deck, construction barriers of 3- 5/8 inch metal studs at 16 inches on center with 5/8 inch type X fire code gypsum board on both sides. All seams shall be taped and finished. Paint side of partition exposed to public view. Install vinyl cove base to match existing. Entry door shall be hollow metal pre-hung type with integral full perimeter smoke weather-stripping and closer. Provide an area for mats approximately 24 inches by 48 inches both sides.

4. Contractor shall advise the Owner of any work to be performed outside of any areas protected by barriers. All necessary containment requirements will remain in effect for work in areas outside of barriers.

5. Seal all penetrations at existing perimeter walls and floor slabs.

6. Place isolation barriers at penetration of ceiling envelopes, chases, and ceiling spaces to stop movement of air and debris.

7. Erect dust barriers at egress routes allowing for emergency egress.

8. Provide anteroom or double entrance openings that allow workers to remove protective clothing or vacuum off existing clothing. Provide a zip-up door entry system or triple batted polyethylene sheet plastic goods, 6 mil minimum thickness, entryway with weighted bottom. Seal top attachment point with at least two overlapping layers of 5 cm wide heavy-duty cloth duct tape for each side of entry.

9. When openings are made into existing ceilings, a portable dust containment or plastic enclosure will be used, sealing off openings, and fitted tightly from ceiling to floor. Any ceiling access panels opened for investigation beyond the sealed areas will be replaced immediately when unattended.

10. Prevent birds and insects from gaining access to the hospital and hospital air-intake ducts. Exterior openings will remain closed when not in use.

11. Upon completion of barrier, cease all operations and contact the Owner so that a proper inspection can occur by submitting an inspection request per the "Commissioning and Inspection Procedure."

2.3 EQUIPMENT AND SUPPLIES

A. Delivery and removal of supplies and equipment may be restricted to a specific period time when patient/staff activity is minimized. Specific routing will be required.

B. Any material which is prepackaged, boxed, or otherwise contained in such a manner as to prevent contamination to the surrounding areas is not required to be covered as specified by this Section.

C. Construction materials such as drywall will be stored in clean, dry areas to prevent the growth of bacteria and fungi.

D. Ductwork materials will be stored in a clean, dry area to prevent the accumulation of dust in the ductwork prior to installation

E. All construction debris shall be placed in rigid containers with integral covers, or covered with polyethylene film sheeting, 6 mil minimum thickness, and sealed with 5 cm width heavy duty cloth duct tape, before removal from the construction area. Containers are to be wiped down with a bleach-solution-treated damp cloth prior to removal from the construction area.

2.4 INTERNAL TRAFFIC FLOW

A. All construction traffic within the building shall follow routes as designated by the Owner and shall be strictly enforced.

B. Direct pedestrian traffic from construction areas away from patient-care areas to limit opening and closing of doors (or other barriers) that may cause duct dispersion, entry of contaminated air, or tracking of dust to patient areas.

2.5 VENTILATION

A. When negative air pressure is required, the first method of choice is to exhaust to the outside atmosphere. The Contractor will provide exhaust fans or HEPA filtered ventilation units to maintain the negative air pressure within the construction area. Provide redundant exhaust fans or HEPA filtered ventilation units, whenever possible. Exhaust fans or HEPA filtered ventilation units will run continuously. Ensure that exhausted air does not circulate back into other areas of the building by locating vents away from all intakes and sealing windows and openings adjacent to the construction. Units shall provide a minimum of 6 air changes per hour.

B. The secondary method of choice to maintain negative air pressure is by using the hospital's exhaust system that is properly filtered by a filter box. The Contractor will provide a filter box, approved by the Owner, to connect to the exhaust system. If not properly filtered, the Contractor will be responsible for cleaning the ductwork. The return air system will not be used to obtain negative air pressure without the approval of the Owner.

C. Contractor is responsible for maintain equipment and replacement of HEPA and other filters. Filters will be changed on a regular basis. Change filters daily during demolition and drywall sanding and a minimum of twice a week during other times.

D. System shall maintain a minimum of 0.01 to 0.02 inches or greater of negative pressure inside the containment area. The Contractor will furnish and install the Baulin-tube device to monitor. Negative air pressure will be continuously monitored by the Owner.

E. Maintain airflow from clean area through the ante room and into the work area

2.6 HOUSEKEEPING

A. Dust generation shall be reduced as much as possible. Prevent airborne dust from developing. Use of bleach solution sprays is acceptable, provided that no accumulation of standing water or material saturation is permitted. Lightly mist concealed areas with an aerosolized bleach solution to minimize dust generation.

B. Use bleach in a well-ventilated area. Do not mix bleach with other cleaning chemicals, especially those containing ammonia. Poisonous vapors will result.

C. Walk-off mats will be used at exits and entrances to the work area. Adhesive walk-off mats should be placed at all doors exiting the construction area and carpeted walk-off mats should be placed at all doors entering into a construction area.

D. Carpeted walk-off dust mats will be vacuumed at least twice per 8-hour shift and at the end of the workday. Any dust tracked outside of the construction area shall be vacuumed or damp-mopped immediately. Vacuum cleaners shall be outfitted with HEPA filters.

E. Adhesive walk-off mats should be changed daily, or more frequently as needed, to maintain adhesive surfaces.

F. Mats shall be installed and maintained by the Contractor.

G. From the start of construction until the drywall has been primed, the work area shall be bleach-solution-treated damp-mopped clean a minimum of once per eight hour shift, at equal intervals or as directed by the Owner, whichever is more frequent. Vacuum cleaners will be outfitted with HEPA filters. Class III and IV areas also require HEPA filtered vacuuming at the same intervals as listed above. After the drywall has been primed, the damp mopping and vacuuming operations shall be performed on an as-needed basis as recommended by the Owner.

H. All construction debris is to be removed a minimum of one time per eight-hour shift, at equal intervals, or as recommended by the Owner, whichever is more frequent in accordance with all requirements previously noted.

I. The Contractor shall record all information pertaining to cleaning on a log. This log shall be posted on the inside of the construction barrier entry door and kept current by the Contractor. Information required, but not limited to, will be the name of the person cleaning the area, changing the mats, changing the filters, and recording the date and time-of-day the work was performed.

2.7 PROTECTIVE CLOTHING

A. Disposable shoe covers, head covers, and coveralls are to be worn during demolition and other specified times.

B. Protective clothing shall be provided by the Contractor.

C. Protective clothing will be removed any time the worker leaves the immediate work area.

D. Used coveralls, head covers, and shoe covers will be placed in a sealed plastic bag, prior to removal from the work area, for disposal by the Contractor.

E. Entering and Exiting Work Area: During demolition and anytime existing surfaces are to be disturbed, as directed by the Owner, workers may enter the area at the beginning of their respective work shift in normal work attire. Once in the construction area, all workers must wear disposable, coverall jumpsuits made of a non-woven fabric over and completely covering their work clothing. The coverall shall be worn at any time that the worker is within the perimeter of the barrier work site, and shall be taken off as the worker leaves the work site enclosure.

2.8 PRECAUTIONARY AND REMEDIAL WORK

A. The Contractor is responsible to protect all construction materials (stored or in-place) from exposure to moisture or accidental leaks and water intrusion. Ensure that moisture is not trapped in enclosed spaces such as under metal stud channels or encapsulated by finishes such as saturated slabs.

B. All gypsum and wallboard materials must be installed 1/2 inch above finish floor materials to eliminate any potential wicking of moisture.

C. Stored Materials: Any material exposed to moisture prior to installation shall be disposed of.

D. Installed Materials: Any material installed, prior to receiving finishes, exposed to moisture shall be removed and disposed of.

E. Finished Materials; Any material damaged by moisture after finishing shall have all damaged portions removed and disposed of. Damaged materials shall be defined as any material showing a moisture content of 60% or more, 24 hours after the exposure, as measured by a surface moisture detection device such as the Tramex Moisture Encounter non-invasive moisture meter. Contractor shall remove damaged material to at least 1/2 inch beyond damaged areas as directed by the Owner.

F. Non-Absorbent (Hard) Materials: Any hard material exposed to moisture shall be thoroughly scrubbed with a mild detergent followed by a rinse of surface using a solution of 1/4 to 1/2 cup of bleach per gallon water. Strictly follow all manufacturer requirements for use of chlorine based products. Do not rinse with water after application.

12. Caution: Chlorine may cause damage to materials or fade colors; contractor to confirm reactions to chlorine.

13. If reactions are determined to be possible, the Contractor shall utilize the mild detergent method of cleaning.

G. Furnishings, Fabrics, or Finish Materials: Any furnishing, fabrics, or finishes exposed to moisture shall be examined by the Owner. If the Owner determines the products to be damaged, the Contractor shall remove and replace all damaged products. If the Owner determines that the products can be cleaned and remain in place, the Contractor shall steam clean (provided this method is approved by the manufacturer) and completely dry all affected areas.

H. Warranties: If any recommended cleaning methods would void any warranties, the material shall be replaced.

I. Contractor shall employ dehumidifiers to dry the affected areas immediately. After the area has been completely dried the Contractor may continue work.

2.9 EMERGENCY SITUATIONS

A. Notify the Owner immediately if an emergency situation should occur. All work in the area shall be stopped immediately and work may not begin again until authorized by the Owner. The overall risk to the patient from both the emergency and Apergillus must be considered. Prior to taking corrective action the patient should be removed from the area. However, if the patient cannot be removed from the area, the patient must be isolated from the work in accordance with the requirements.

2.10 COMPLETION OF THE WORK

A. The isolation barrier and filtered negative airflow equipment shall be disconnected and removed only after approval by the Owner. Upon approval, remove the isolation barrier and other equipment. All debris resulting from the demolition of the isolation barrier shall be removed in accordance with these specifications.

B. The Contractor shall vacuum the isolation barrier area with approved HEPA filter equipment.

C. The Contractor will vacuum and clean all surfaces in the completed construction area, rendering them free of dust prior to the removal of isolation barriers.

D. Barrier materials should be removed carefully to minimize spreading of dirt and debris associated with construction. Barrier materials should be wet wiped, HEPA vacuumed, or water misted prior to removal. Barriers should be discarded as construction debris.

E. The Contractor will remove all blockages from the air systems.

F. Owner will examine the HVAC equipment and filters for blockage and/or leakage.

2.11 PLUMBING ALTERATIONS

A. Exercise caution when handling fluids (i.e. removing plumbing pipes and fixtures) to prevent wetting of building materials and/or contamination of work areas.

B. Cap unused domestic water pipe branches at no more than three pipe diameters from the main line.

**END OF SECTION 01 35 33**