

SECTION 00 72 01
INFECTION CONTROL

PART 1 - GENERAL

A. GENERAL INTENTION:

1. The Contractor is solely responsible for the health and safety of their employees. The Contractor is also responsible to protect the health and safety of the VA Community (patients, staff, and visitors) from unwanted effects of construction.
2. The Contractor shall comply with Section 01 00 00 - General Requirements, Paragraph 1.8, Infection Prevention Measures.
3. PRECAUTIONS:
 - a. The Contractor is responsible for taking precautions necessary to minimize infection control risk. Such precautions are defined in this section.
 - b. Each construction activity has been assigned an "Infection Control Precaution Class" (ICP Class), which is determined by:
 - 1) The type of construction work;
 - 2) The duration of construction work;
 - 3) The location of construction work; and
 - 4) The relative risk to the VA Community.
 - c. Each ICP Class lists separate precautions, which must be taken during construction and at the completion of construction. Such precautions are mandatory.
 - d. The VA Infection Control Practitioner (or designee) shall assign an ICP Class for any construction activity, which has not been assigned one.
 - e. When several construction activities occur simultaneously in the Project Area, the highest ICP Class for any one of the activities shall apply to all of the activities.
4. INFECTION CONTROL PLAN: Contractor shall establish and maintain an Infection Control Plan detailing project-specific measures to be taken. Prior to the start of work, Contractor shall submit this plan for review for compliance with this section in accordance with Section 01 33 23, Shop Drawings, Product Data, and Samples.

B. SUBMITTALS

1. All submittal shall be in accordance with Section 01 33 23, Shop Drawings, Product Data, and Samples.
2. Submit complete manufacturer's data and literature on all products.
3. Submit a complete Infection Control Plan, including:
 - a. Floor plan showing temporary construction, dust mats, exhausts fans, floor protection, and paths of travel (for construction personnel access, construction materials, and debris removal).
 - b. Sequence of operations
 - c. Description of Infection Control procedures

C. TESTING:

1. Any time that the Contractor is working within the existing building, Contractor shall perform smoke tests each day that there is ICP Class II, III, or IV construction activity.
2. Perform a minimum of one test, three times a day.
3. Location and schedule for testing shall be as directed by COTR. COTR and Construction Superintendent shall be present for all tests.
4. Testing shall determine if there is a "positive" reading (air flow moving from work areas to occupied areas) when ICP Class II, III, or IV activities are being performed, until such activities are complete. If a positive reading is taken, Contractor shall immediately stop construction, correct the situation, and re-test. Construction may not resume until authorized by the COTR.

D. INFECTION CONTROL PRECAUTION CLASSES (ICP CLASS):

1. Work required in each ICP Class shall be in accordance with the following table:

ICP Class	Work Required During Construction Period 1	Work Required Upon Completion of Project
Class I	<ol style="list-style-type: none"> 1. Execute work by methods to minimize raising dust from construction operations. 2. Immediately replace a ceiling tile displaced for visual inspection. 	
Class II	<ol style="list-style-type: none"> 1. During drilling, grinding, cutting, sanding, and other dust-producing operations, provide active means to minimize dust from dispersing into the atmosphere. These shall consist of vacuum attachments to power tools, industrial strength ("Shop-Vac") vacuum cleaners, or maintaining negative air pressure within the work area utilizing HEPA-filter-equipped air filtration units. 2. Water mist work surfaces to control dust while cutting. 3. For activities within work area, provide temporary construction partitions and seal unused doors and voids at perimeter of work area with duct tape to seal work area from non-work area. 4. Place dust mat at entrances and exits of work area. 5. To prevent contamination of duct system, isolate HVAC system in work area by removing diffusers, grilles and flex duct, and capping ducts airtight. 6. Remove construction waste daily. 	<ol style="list-style-type: none"> 1. Wipe work surfaces with disinfectant. 2. Contain construction waste before transport in tightly covered containers. 3. Wet mop and/or vacuum with HEPA-filtered vacuum before leaving work area. 4. Remove isolation of HVAC system in work area; reinstall removed portions of HVAC system.

ICP Class	Work Required During Construction Period 1	Work Required Upon Completion of Project
Class III	<ol style="list-style-type: none"> 1. To prevent contamination of duct system, isolate HVAC system in work area by removing diffusers, grilles and flex duct, and capping ducts airtight. 2. For activities within work area, provide temporary construction partitions and seal unused doors and voids at perimeter of work area with duct tape to seal work area from non-work area. For activities outside of work area, provide temporary partitions and seal doors as noted above or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA-filtered vacuum for vacuuming prior to 	<ol style="list-style-type: none"> 1. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 2. Thoroughly vacuum work area with HEPA-filtered vacuums. 3. Wet mop area with disinfectant. 4. Remove isolation of HVAC system in work area; reinstall removed portions of HVAC system. 5. Do not remove

ICP Class	Work Required During Construction Period 1	Work Required Upon Completion of Project
	<p>exit) before construction begins.</p> <p>3. Maintain negative air pressure within work area utilizing HEPA-filter-equipped air filtration units.</p> <p>4. Contain construction waste before transport in tightly covered containers. Remove waste daily.</p> <p>5. Cover transport containers. Tape covering unless using a solid lid.</p> <p>6. Provide dust mat at entrances and exits of work area.</p>	<p>precautions from work area until project is inspected by at least one of the following: the VA Safety Department, Infection Control Department, the COTR, or their designees.</p>
Class IV	<p>1. To prevent contamination of duct system, isolate HVAC system in work area by removing diffusers, grilles and flex duct, and capping ducts airtight.</p> <p>2. For activities within work area, provide temporary construction partitions and seal unused doors and voids at perimeter of work area with duct tape to seal work area from non-work area. For activities outside of work area, provide temporary partitions and seal doors as noted above or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA-filtered vacuum for vacuuming prior to exit) before construction begins.</p> <p>3. Maintain negative air pressure within work area utilizing HEPA-filter-equipped air filtration units.</p> <p>4. Seal holes at pipes, conduits, ducts, and punctures airtight.</p> <p>5. Construct an air-tight vestibule and require all personnel to pass through this room so they can be vacuumed using a HEPA-filtered vacuum cleaner before leaving work area; or they can wear cloth or paper coveralls that are removed in the temporary vestibule each time they leave the work area.</p> <p>6. Provide dust mat at entrances and exits of work area.</p> <p>7. All personnel entering the work area are required to wear shoe covers. Shoe covers must be changed in the temporary vestibule each time personnel exits the work area.</p> <p>8. Contain construction waste before transport in tightly covered containers. Remove waste daily.</p> <p>9. Cover transport containers. Tape covering unless using a solid lid.</p>	<p>1. Remove barrier material carefully to minimize spreading of dirt and debris associated with construction.</p> <p>2. Thoroughly vacuum work area with HEPA-filtered vacuums.</p> <p>3. Wet mop area with disinfectant.</p> <p>4. Remove isolation of HVAC system in work area; reinstall removed portions of HVAC system.</p> <p>5. Do not remove precautions from work area until project is inspected by at least one of the following: the VA Safety Department, Infection Control Department, the COTR, or their designees.</p>

E. LIST OF INFECTION CONTROL PRECAUTION CLASS (ICP CLASS) FOR EACH CONSTRUCTION ACTIVITY 1:

SECTION #	SECTION NAME	CLASS
Section 02 41 00	Demolition	Class IV
Section 04 05 13	Masonry Mortaring	Class II
Section 04 20 00	Unit Masonry	Class II
Section 05 50 00	Metal Fabrications	Class I
Section 06 10 00	Rough Carpentry	Class II
Section 06 20 00	Finish Carpentry:	Class II
Section 07 21 13	Thermal Insulation	Class II
Section 07 92 00	Joint Sealants	Class I
Section 09 22 16	Non-Structural Metal Framing	Class II
Section 09 24 00	Portland Cement Plastering	Class II
Section 09 29 00	Gypsum Board	Class III
Section 09 51 00	Acoustical Ceilings	Class II
Section 09 65 13	Resilient Base and Accessories	Class I
Section 09 68 00	Carpeting	Class II
Section 09 91 00	Painting:	
	a. Sanding & Cleaning	Class IV
	b. Coating Application	Class I
Section 10 28 00	Toilet Accessories	Class II
Section 22 05 11	Common Work Results for Plumbing	Class I
Section 22 05 23	General-Duty Valves for Plumbing Piping	Class I
Section 22 11 00	Facility Water Distribution	Class I
Section 22 13 00	Facility Sanitary and Vent Piping	Class I
Section 22 40 00	Plumbing Fixtures	Class I

SECTION #	SECTION NAME	CLASS
Section 23 05 11	Common Work Results for HVAC and Steam Generation	Class I
Section 23 05 93	Testing, Adjusting, and Balancing for HVAC	Class I
Section 23 07 11	HVAC, Plumbing, and Boiler Plant Insulation	Class II
Section 23 09 23	Direct-Digital Control System for HVAC	Class I
Section 23 21 13	Hydronic Piping	Class I
Section 23 31 00	HVAC Ducts and Casings	Class II
Section 23 37 00	Air Outlets and Inlets	Class I
Section 26 05 11	Requirements for Electrical Installations	Class I
Section 26 05 21	Low-Voltage Electrical Power Conductors and Cables (600 Volts and Below)	Class I
Section 26 05 26	Grounding and Bonding for Electrical Systems	Class I
Section 26 05 33	Raceway and Boxes for Electrical Systems	Class I
Section 26 27 26	Wiring Devices	Class I
Section 26 51 00	Interior Lighting	Class I

Notes:

1. Precautions listed under "Work Required During Construction Period" are applicable 24 hours a day, 7 days a week, until each activity is complete.

PART 2 - PRODUCTS/DEFINITIONS

A. Temporary construction materials shall be as shown in the drawings.

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- B. DUST MATS: 36" x 36", disposable LDPE adhesive sheets that hold particulate matter on contact, 30 sheets/mat, mounted on manufacturer's 38" x 38" mat base. Lab Safety Supply Inc., Items 1631-5BC (4 tacky mats) and 60428BE (1 mat base), or approved equal. Lab Safety can be contacted at 1-800-356-0783 and at www.labsafety.com.
- C. HEPA (HIGH EFFICIENCY PARTICULATE AIR) FILTER: filters which, when properly installed in HVAC and vacuum systems, capture 95% of 0.3 microns, including pollen, mold spores, and dust particles.
- D. FLOOR MATS: 3' wide x 10' long and 3' wide x 16' long walk-off mats with nylon surface and nitrile backing as provided by Staub Textile Services (Contact Richard Markus @ 1-800-836-0803), or approved equal.
- E. NEGATIVE PRESSURE: Providing an appreciable flow of clean air from the occupied portion of the Medical Center into the work area through the use of HVAC systems, fans, and filters. Exhaust for the work area shall be 20% greater than intake.
- F. Transport containers (for transporting waste through the Medical Center): Plastic, 4-wheel carts, approximately 31" W. x 66" L x 38" H., 1 CY/1000 lb. capacity, as manufactured by Rubbermaid, or approved equal. Provide manufacturer's solid plastic lids for ICP Class III and IV activities.

PART 3 - EXECUTION

- A. TEMPORARY CONSTRUCTION: Construct temporary partitions in accordance with the drawings.
- B. SEQUENCING & SCHEDULING:
 - 1. Prior to starting construction activities within the existing building or open to the existing building, infection control precautions shall be implemented in the following order:
 - a. Install negative air pressure/HEPA filter system (ICP Classes III & IV; Class II when provided).
 - b. Isolate HVAC system (ICP Classes II, III, and IV).
 - c. Construct temporary partitions and seal openings (ICP Classes II, III, and IV).
 - d. Provide all other precautions.
 - 2. At the completion of construction activities, infection control precautions shall be removed in the reverse order from which they were implemented (i.e., start with 1.d and end with 1.a).
 - 3. When VA inspection is required prior to removing precautions (see ICP chart in Part I), notify COTR at least 2 working days prior to inspection.
- C. DUST MATS: Provide a new, clean, sticky surface as required to eliminate tracking of dust from the work area to occupied areas; at a minimum, provide this new surface at the **beginning of each** work day and as directed by CO/COTR to maintain clean areas within the occupied building. Install on floor on the occupied side of each door between construction areas and areas occupied by the VA.
- D. HEPA FILTERS: Install in accordance with manufacturer's recommendations as required to produce the specified performance. Change filters and provide pre-filters as necessary to maintain the specified performance.
- E. NEGATIVE PRESSURE: Operate fans and other equipment continuously (24 hours a day, 7 days a week) during construction, to ensure that negative pressure is maintained in the work area. Provide galvanized steel ductwork from fans/filters/ equipment, to the exterior. Provide temporary magnahelic gauges at each door between construction areas and areas occupied by the VA. Provide sensors on both sides of doors. Check readings of magnahelic gauge with COTR a minimum of 4 times a day.
- F. RESTORATION: Remove all precautions after work is complete (See "B" above). Repair or replace any damage due to temporary precautions. Remove all dust, dirt, and debris prior to removing temporary partitions.

END OF SECTION 00 72 01