

**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 1.4, Health & Safety.
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"> <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. 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.</li> <li>2. Water mist work surfaces to control dust while cutting.</li> <li>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.</li> <li>4. Place dust mat at entrances and exits of work area.</li> <li>5. To prevent contamination of duct system, isolate HVAC system in work area by removing diffusers, grilles and flex duct, and capping ducts airtight.</li> <li>6. Remove construction waste daily.</li> </ol>	<ol style="list-style-type: none"> <li>1. Wipe work surfaces with disinfectant.</li> <li>2. Contain construction waste before transport in tightly covered containers.</li> <li>3. Wet mop and/or vacuum with HEPA-filtered vacuum before leaving work area.</li> <li>4. Remove isolation of HVAC system in work area; reinstall removed portions of HVAC system.</li> </ol>
Class III	<ol style="list-style-type: none"> <li>1. To prevent contamination of duct system, isolate HVAC system in work area by removing diffusers, grilles and flex duct, and capping ducts airtight.</li> <li>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.</li> <li>3. Maintain negative air pressure within work area utilizing HEPA-filter-equipped air filtration units.</li> <li>4. Contain construction waste before transport in tightly covered containers. Remove waste daily.</li> <li>5. Cover transport containers. Tape covering unless using a solid lid.</li> <li>6. Provide dust mat at entrances and exits of work area.</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.</li> <li>2. Thoroughly vacuum work area with HEPA-filtered vacuums.</li> <li>3. Wet mop area with disinfectant.</li> <li>4. Remove isolation of HVAC system in work area; reinstall removed portions of HVAC system.</li> <li>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.</li> </ol>

ICP Class	Work Required During Construction Period 1	Work Required Upon Completion of Project
Class IV	<ol style="list-style-type: none"> <li>1. To prevent contamination of duct system, isolate HVAC system in work area by removing diffusers, grilles and flex duct, and capping ducts airtight.</li> <li>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.</li> <li>3. Maintain negative air pressure within work area utilizing HEPA-filter-equipped air filtration units.</li> <li>4. Seal holes at pipes, conduits, ducts, and punctures airtight.</li> <li>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.</li> <li>6. Provide dust mat at entrances and exits of work area.</li> <li>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.</li> <li>8. Contain construction waste before transport in tightly covered containers. Remove waste daily.</li> <li>9. Cover transport containers. Tape covering unless using a solid lid.</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove barrier material carefully to minimize spreading of dirt and debris associated with construction.</li> <li>2. Thoroughly vacuum work area with HEPA-filtered vacuums.</li> <li>3. Wet mop area with disinfectant.</li> <li>4. Remove isolation of HVAC system in work area; reinstall removed portions of HVAC system.</li> <li>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.</li> </ol>

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 03 30 53,	Cast-In-Place Concrete	Class II
Section 04 15 13,	Masonry Mortaring	Class II
Section 04 20 00,	Unit Masonry	Class II
Section 05 36 00,	Composite Metal Decking	Class II
Section 05 50 00,	Metal Fabrications	Class II
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 51 00,	Built-Up Bitumious Roofing	Class II
Section 07 60 00,	Flashing and Sheet Metal	Class I
Section 07 84 00,	Firestopping	Class I
Section 07 92 00,	Joint Sealants	Class I
Section 08 11 13,	Hollow Metal Doors and Frames	Class I
Section 08 14 00,	Interior Wood Doors	Class I
Section 08 31 13,	Access Doors and Frames	Class I
Section 08 41 23,	Fire-Rated Borrowed Lites (Steel Fames & Clear Glass)	Class I
Section 08 56 59,	Service and Teller Window Units	Class I
Section 08 56 66,	Security Window Screens	Class I
Section 08 71 00,	Door Hardware	Class I
Section 08 71 13,	Automatic Door Operators	Class I
Section 08 80 00,	Glazing	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 30 13,	Ceramic/Porcelain Tiling	Class II
Section 09 51 00,	Acoustical Ceilings	Class II
Section 09 65 13,	Resilient Base and Accessories	Class III
Section 09 65 16,	Resilient Sheet Flooring	Class III
Section 09 65 19,	Resilient Tile Flooring	Class III
Section 09 72 16,	Vinyl-Coated Fabric Wall Coverings	Class I
Section 09 91 00,	Painting:	
a.	Sanding & Cleaning	Class IV
b.	Coating Application	Class I
Section 10 14 00,	Signage	Class I
Section 10 26 00,	Wall and Door Protection	Class I
Section 10 28 00,	Toilet Accessories	Class II
Section 10 44 13,	Fire Extinguisher Cabinets	Class I
Section 10 50 00,	Lockers	Class I
Section 10 8200,	Louvered Rooftop Equipment Screens	Class I
Section 12 31 10,	Pharmacy Casework	Class II
Section 12 36 00,	Countertops	Class II
Section 12 50 00,	Storage Shelving	Class I
Section 12 60 00,	Systems Furnishings	Class I
Section 21 05 11,	Common Work Results for Fire Suppression	Class II
Section 21 13 13,	Wet-Pipe Sprinkler Systems	Class I
Section 22 05 11,	Common Work Results for Plumbing	Class II
Section 22 05 23,	General-Duty Valves for Plumbing Piping	Class I
Section 22 11 00,	Facility Water Distribution	Class II
Section 22 13 00,	Facility Sanitary Sewerage	Class II
Section 22 40 00,	Plumbing Fixtures	Class I

Section 23 05 11,	Common Work Results for HVAC & Steam Generation	Class II
Section 23 05 12,	General Motor Requirements for HVAC & Steam Generation Equipment	Class I
Section 23 05 41,	Noise and Vibration Control for HVAC Piping and Equipment	Class I
Section 23 05 92,	Pre-Balancing and Testing for HVAC:	Class I
Section 23 05 93,	Testing, Adjusting, and Balancing for HVAC	Class II
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 23,	Hydronic Piping	Class II
Section 23 21 23,	Hydronic Pumps	Class I
Section 23 22 13,	Steam and Condensate Heating Piping	Class II
Section 23 25 00,	HVAC Water Treatment	Class I
Section 23 31 00,	HVAC Ducts and Casings	Class II
Section 23 34 00,	HVAC Fans	Class I
Section 23 36 00,	Air Terminal Units	Class I
Section 23 37 00,	Air Outlets and Inlets	Class I
Section 23 37 23.16,	Louvers	Class I
Section 23 40 00,	HVAC Air Cleaning Devices	Class I
Section 23 72 00,	Air-to-Air Energy Recovery Equipment	Class I
Section 23 73 00,	Central-Station Air-Handling Units	Class I
Section 23 74 00,	Outdoor, Central Station Air-Handling Units	Class I
Section 23 82 16,	Air Coils	Class I
Section 26 05 11,	Requirements for Electrical Installations	Class II
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 II
Section 26 24 16,	Panelboards	Class I
Section 26 27 26,	Wiring Devices	Class I
Section 26 29 11,	Low-Voltage Motor Starters	Class I
Section 26 29 21,	Disconnect Switches	Class I
Section 26 51 00,	Interior Lighting	Class I
Section 27 05 11,	Requirements for Communications Installations	Class I
Section 27 05 26,	Grounding and Bonding for Communications Systems	Class I
Section 27 05 33,	Raceway and Boxes for Communications Systems	Class II
Section 27 10 00,	Structured Cabling	Class I
Section 27 11 00,	Communications Equipment Room Fittings	Class I
Section 27 15 00,	Communications Horizontal Cabling	Class I
Section 28 05 11,	Requirements for Electronic Safety and Security Installations	Class I
Section 28 05 13,	Conductors and Cables for Electronic Safety and Security	Class I
Section 28 05 26,	Grounding and Bonding for Electronic Safety and Security	Class I
Section 28 05 33,	Raceways and Boxes for Electronic Safety and Security	Class I
Section 28 13 11,	Physical Access Control Systems (PACS)	Class I
Section 28 31 00,	Fire Detection and Alarm	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.
- 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](http://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" long 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 01 02 00**