

BuildingName  
The Description of the Project  
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**SPECIFICATION DIVISION 2**

NUMBER            SECTION DESCRIPTION

**DIVISION 02 EXISTING CONDITIONS**

SECTION 028400 - PCB REMEDIATION

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**DIVISION 02 EXISTING CONDITIONS**  
**SECTION 028400 - PCB REMEDIATION**

*THIS SECTION DESCRIBES REQUIREMENTS FOR DEMOLITION AND DISPOSAL OF BUILDING MATERIALS SUSPECTED OF CONTAINING PCB'S. THIS APPLIES TO ALL SUSPECT PCB CONTAINING BUILDING MATERIALS TO BE DISTURBED DURING DEMOLITION OR RENOVATION. AEC MUST CONTACT OSEH EARLY IN THE DESIGN PHASE FOR A PCB SURVEY OF SUSPECT MATERIALS TO BE DISTURBED. OSEH WILL CONDUCT SAMPLING TO DETERMINE THE PRESENCE AND QUANTITY OF PCBs IN THE MATERIAL.*

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This section specifies requirements for the demolition and disposal of PCB Bulk Product Waste (BPW). The requirements of this section apply to demolition or renovation of the following:
  - 1. Material (paint, caulk and sealants etc.) previously determined or assumed to contain greater than 50 parts per million (ppm) PCBs.
  - 2. Substrate contaminated (>50 ppm) by PCB paints, caulks and/or sealants etc., if removed at the same time as PCB BPW.
- B. Extent of PCB-containing materials is as follows:

*INSERT SURVEY INFORMATION HERE.*

- 1.

**1.2 DEFINITIONS**

- A. The abbreviation "PCB" stands for Polychlorinated Biphenyl.
- B. The term "PCB bulk product waste" refers to waste derived from manufactured products containing PCBs in a non-liquid state, where the concentration at time of disposal is greater than or equal to 50 parts per million (ppm). This includes caulks, applied dried paints, varnishes, waxes, or other similar coatings or sealants.
- C. The term "Project Site" indicates the limits of the project site as indicated on drawings or by provisions of this specification.
- D. The term "work area" indicates the area within the critical barrier.
- E. The term "critical barrier" indicates the perimeter of the enclosure within which PCB disruption/removal work takes place. Critical barriers may include existing floor, wall, and ceiling structures, as well as constructed partitions, closures and seals.
- F. The term "EHS" refers to Owner's Environment, Health and Safety Department, 1239 Kipke Drive, Ann Arbor, MI 48109-1010, phone (734)747-1142.

**1.3 RELATED SECTIONS**

- A. Demolition and removal of items not containing PCB as a component is included in Division 02 Section "Selective Demolition."

**PART 2 - (NOT APPLICABLE)**

**PART 3 - EXECUTION**

**3.1 PCB BULK PRODUCT WASTE REMOVAL, GENERAL**

- A. Conduct PCB removal operations in a manner that fully protects Contractor's and subcontractor's employees, the general public, and building occupants from exposure to PCB's.
- B. Protect adjacent areas, materials and surfaces from damage due to demolition operations, including but not necessarily limited to the following:
  - 1. Water damage.
  - 2. Dirt, dust and debris.
  - 3. Abrasion.
  - 4. Cuts and scratches.
  - 5. Holes from fasteners for temporary barriers.
- C. All removal shall be conducted within a regulated area that complies with the following requirements:
  - 1. Establish a regulated area with caution tape and signage to keep unauthorized personnel out of the area.
  - 2. Allow only authorized, properly protected personnel to enter the regulated area. Immediately report unauthorized individuals entering the work area to EHS or the Owner's consultant.
- D. Provide respiratory protection to employees as required by current MiOSHA regulations including Part 451 Respiratory Protection and MiOSHA part 301 Air Contaminants.
  - 1. Provide abatement workers with adequate respiratory protection during PCB BPW removal. At a minimum, half face respirators with HEPA cartridges must be used. If removal methods generate heat above 212°F, combination HEPA/organic cartridges must be used.
  - 2. Provide personal protective equipment for protection against dermal exposures including nitrile gloves and Tyvek<sup>R</sup> or similar suits.
- E. Maintain at each job site and post the following documents:
  - 1. Employee respiratory protection program.
  - 2. Michigan Right-To-Know poster.
  - 3. Material Safety Data Sheet locator.
  - 4. Company standard operating procedure.
  - 5. This specification Section.
  - 6. Material Safety Data Sheets for products used on job.
- F. Do not use any of the following equipment or work practices, regardless of measured exposure levels:

1. Dry sweeping or use of compressed air to clean work surfaces.
2. Removal of caulk using abrasive grinding wheels, wire wheels, sanding or other means that generate excessive dust.
3. Use of ordinary vacuums to clean up dust and debris. Vacuums with HEPA filtration must be used.

### 3.2 PCB BPW REMOVAL BY HAND METHODS

- A. Preparation of the Work Area: Complete the following preparation work prior to beginning removal operations using hand methods (utility knife, hammer and chisel, putty knife etc.).
  1. Seal intake and exhaust vents and duct seams within the regulated area with 1 layer of 6-mil polyethylene sheeting.
  2. Protect all surfaces near removal activity. Remove moveable objects from the work area, and cover fixed objects with impermeable dropcloths or plastic sheeting with edges securely sealed with tape.
  3. All floor and wall areas adjacent to the work area shall have a layer of 6 mil fire retardant polyethylene sheeting, attached to the interior wall and on floor surfaces below the abatement work area, at least 5 feet wide.
  4. Close all windows during interior and exterior removal projects.
  5. Regardless of method of removal, if dust is noted during removal activities, stop removal and adjust work practices or engineering controls. If dust generation continues, a full enclosure is required. See Section 3.3 "PCB Removal by Mechanical Methods."
- B. PCB BPW Removal Operations: Comply with the following requirements for removal operations:
  1. Remove PCB BPW using misting methods to assist in dust settling.
  2. Material should be removed in intact sections if possible.
  3. Adjust mechanical ventilation and or work practices accordingly to eliminate visible dust levels.
  4. Place PCB BPW in labeled 6-mil polyethylene bags.
  5. Place all bagged PCB BPW in owner provided drums or dumpsters.
- C. Post-Removal Operation Requirements: After completion of PCB BPW removal and clean-up operations, comply with the following requirements:
  1. HEPA vacuum and wet wipe/mop all areas until area is dust free.
  2. The Contractor representative, in presence of Owner or Owner's Representative shall inspect the entire work area for PCB BPW dust or material.
  3. If any suspect material is found, repeat final cleaning operation, until the visual inspection is satisfactory to the Owner.
- D. Employee Decontamination Requirements:
  1. Employees shall immediately wash hands, face and other potentially exposed surfaces of the body with soap and water each time they leave the regulated area.

2. Change out of work clothes and shower if necessary to prevent bringing PCB contamination home.

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### **3.3 PCB BPW REMOVAL BY MECHANICAL METHODS**

- A. Preparation of the Work Area: Complete the following preparation work prior to beginning removal operations using mechanical means (any method other than hand tools).
  1. Mechanical cutting or grinding of PCB materials is not permitted, unless the equipment has a HEPA filtered exhaust.
  2. Install critical barriers over each opening into the regulated area. The following requirements are in addition to, not in lieu of, other indicated surface and object protection requirements:
    - a. Seal each opening between the work area and adjacent areas with 1 layer of 4-mil polyethylene sheeting. Openings include, but are not necessarily limited to, windows, skylights, doorways, elevator hoistway openings, corridor entrances, drains, ducts, grills, grates, and diffusers.
    - b. Seal intake and exhaust vents and duct seams within the regulated area with 1 layer of 6-mil polyethylene sheeting.
  3. HVAC System Shutdown: Owner's maintenance personnel will shut down heating, cooling, and air conditioning systems when necessary. Coordinate scheduling with Owner's personnel and provide 72 hours notice to the Owner's Representative prior to planned shut-down.
  4. Close all windows during interior and exterior removal projects.
  5. Protection of Surfaces and Objects: The following requirements are in addition to, not in lieu of, indicated work area sealing requirements. Cover the following surfaces and objects as follows:
    - a. Protect all surfaces near removal activity. Remove moveable objects from the work area, and cover fixed objects with impermeable dropcloths or plastic sheeting with edges securely sealed with tape.
    - b. Completely cover walls and floors within the regulated area with a layer of 6-mil polyethylene sheeting. Avoid seams where possible. If seams are necessary, overlap not less than 12 inches and tape joints. Immediately repair punctures and leaks, and clean up seepage.
    - c. Cleaning: Do not use cleaning methods that raise dust, such as sweeping or using vacuum cleaners not equipped with HEPA filters.
    - d. Fully seal floor drains.
  6. Local Exhaust Ventilation: Maintain portable air filtration units in use during PCB BPW removal at interior locations.
    - a. Exhaust directly to building exterior.
    - b. Provide not less than 4 air changes per hour within the enclosure.

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- c. Within the enclosure, through the period of its use, maintain a pressure differential of not less than minus 0.02" water gage with respect to ambient conditions outside the enclosure.
  - 7. Visually inspect the enclosure for breeches and smoke-test for leaks before work begins, and before the start of each work shift. Make all modifications to the enclosure prior to starting removal work.
- B. PCB BPW Removal Operations: Comply with the following requirements for removal operations:
  - 1. Remove PCB BPW using misting methods to assist in dust settling.
  - 2. Material should be removed in intact sections if possible.
  - 3. Adjust mechanical ventilation and or work practices accordingly to minimize visible dust levels.
  - 4. Place PCB BPW in labeled 6-mil polyethylene bags.
  - 5. Place all bagged PCB BPW in owner provided drums or dumpsters.
- C. Post-Removal Operation Requirements: After completion of PCB BPW removal and clean-up operations, comply with the following requirements:
  - 1. HEPA vacuum and wet wipe/mop all areas until area is dust free.
  - 2. The Contractor representative, in presence of Owner or Owner's Representative shall inspect the entire work area for PCB BPW dust or material.
  - 3. If any suspect material is found, repeat final cleaning operation, until the visual inspection is satisfactory to the Owner.
- D. Employee Decontamination Requirements: Comply with the following requirements:
  - 1. Access the work area only through an approved decontamination system. Lock or block other entrances. Seal emergency exits (for use during a fire or accident) with polyethylene sheeting and tape.
  - 2. Entrance To The Regulated Area: Employees shall enter the decontamination area through the clean room, remove and store clothing, and put on protective clothing and respiratory protection before passing through to the equipment room.
  - 3. Exit From The Regulated Area: Employees shall exit the regulated area by removing gross contamination and debris from their protective clothing. The clothing shall be removed and disposed of in the equipment room into labeled impermeable bags or containers.
  - 4. Employees shall wash hands, face and other potentially exposed surfaces of the body with soap and water each time they leave the containment.
  - 5. Employees shall change out of work clothes and shower if necessary to prevent bringing PCB contamination home.

**3.4 DISPOSAL OF WASTE**

- A. PCB BPW shall be disposed of as PCB waste following the requirements listed below:
  - 1. Bag and place PCB BPW in Owner-provided drums or dumpsters. Contact EHS-HMM (734)763-4568 at least two weeks in advance to request containers.
  - 2. All PCB waste must be less than 3 foot x 3 foot prior to bagging or wrapping for disposal.
  - 3. Store waste containers or articles in a secure area.
  - 4. Do not stage containers on lawns, dirt piles, gravel drive areas with mud or basement areas with no elevator access.
  - 5. Ensure that soil, ground water, and drains or sewers within the storage area are protected from possible contamination. Keep containers secure and tightly closed at all times, except when adding waste.
  - 6. Keep abatement waste segregated from other waste and from other Projects. Do not co-mingle waste.
  - 7. Place appropriate labels on all containers. Provide all information required on the label; mark labels using indelible ink. The name of the "Waste Generator" is as follows:
    - a. "Campus Area" 1655 Dean Road, Ann Arbor, Michigan 48109.
    - b. Contact EHS at the start of the project (734-763-4568) for proper generator name and site address.
  - 8. Mark the side of each container with the name and phone number of Owner's Representative knowledgeable about the type of waste contained.
  - 9. Do not remove waste from Project Site.
- B. Disposal of PCB waste shall be done in coordination with EHS-Hazardous Materials Management (HMM).
  - 1. Contact EHS-HMM at least one week in advance to request pick-up of the dumpster.
  - 2. EHS will pickup and dispose of properly packaged and staged PCB waste at no cost to the contractor. Call the EHS-HMM Program at 734-763-4568 to schedule a pickup immediately after PCB waste has been staged.

**END OF SECTION 028400**