

**PART 1 GENERAL**

**1.1 General and Related Work**

- .1 Read this Section in conjunction with all drawings and all other Sections so as to comply with the requirements of Division 1 and the General Conditions of the Contract.
- .2 Requirements specified elsewhere:
  - .1 Section 02 81 00 Hazardous Materials – General Provisions

**1.2 Outline of Work**

- .1 Unless otherwise shown or specified it is the intent that work performed as per this section will result in the removal and destruction of:
  - .1 PCB-containing caulking
- .2 All Work shall be performed in strict accordance with the Project Documents and all governing codes, rules, and regulations. Where conflicts occur between the Project Documents and applicable codes, rules, and regulations, the more stringent shall apply.

**1.3 Quality Assurance**

- .1 Ensure the removal and handling of PCBs is performed by persons experienced in the methods, procedures and industry practices.
- .2 Complete work so that at no time do PCBs contaminate the building or environment.

**1.4 Instruction and Training**

- .1 Instruction and training must be provided to all workers and supervisors. Instruction and training includes the following:
  - .1 Hazards of PCBs.
  - .2 Use, care and disposal of protective equipment (including but not limited to respirators and filters) and clothing that would be used and worn during work, including:
    - .1 Limitations of equipment.
    - .2 Inspection and maintenance of equipment.
    - .3 Proper fitting of equipment.
    - .4 Disinfecting and cleaning of equipment.
  - .3 Personal hygiene to be observed when performing the work.
  - .4 The measures and procedures prescribed by this section.

- .2 Instruction and training must be provided by a competent, qualified person.

## **1.5 Personal Protection**

- .1 Workers handling PCB-containing materials are advised to avoid skin and eye contact.
- .2 During removal of PCBs, personnel are to wear personal protective equipment appropriate to the task.
- .3 During removal of PCB caulking, personnel are to wear, at minimum:
  - .1 Provide workers, at a minimum, with non-powered half-face respirators with P100 high efficiency (HEPA) cartridge filters.
  - .2 Provide workers, with protective eye wear.
  - .3 Provide protective clothing, to all personnel entering the Abatement Work Area.
  - .4 Provide disposable gloves (nitrile), to all personnel entering the Abatement Work Area.

## **1.6 Inspections**

- .1 Refer to Part 1.12 Inspections in Section 02 81 00 – General Provisions.
- .2 The following Milestone Inspections are to be scheduled:
  - .1 Milestone Inspection - Visual Clearance

## **PART 2 PRODUCTS**

### **2.1 Materials**

- .1 Containment Drums: new, not used double bung 45 gallon No. 16 gauge cold rolled steel drums with removable steel lid, PCB resistant gasket (nitrile rubber, cork or Teflon), and 12 gauge compression type ring closure with 5/8" bolt and forged lug. Drums shall be newly painted inside and out with bright white rust-resistant enamel. Metal pail of 16 gauge steel with removal steel lid, are also acceptable for smaller quantities of waste.
- .2 Decontamination Area: An established area for the purpose of decontaminating personnel and equipment.
  - .1 Of sufficient size to accommodate cleaning of equipment and removing personal protective equipment.
  - .2 Install PCB warning signs / tape at the entrance to the decontamination area.
  - .3 The floor shall be covered with polyethylene sheeting.

- .4 Include a hand washing station complete with soap and towels and 6 mil polyethylene bags for disposal of PCB-contaminated items such as gloves, Tyvek suite rags etc.
  - .5 All personnel must enter and exit the Abatement Work Area through the decontamination area.
  - .6 All equipment and surfaces of waste containers must be cleaned prior to removing them from the decontamination room or area.
  - .7 Work clothing must be cleaned with a HEPA vacuum before it is removed.
- .3 Drum liners: clear polyethylene bag, 36" x 60", 6 mil thick. Open one 36" end.
- .4 Label: appropriate PCB Labels and Placards of sufficient size to be clearly legible, for display on waste containers (bags, boxes, rolloffs or drums) which will be used to contain or transport PCB contaminated material, in accordance with TDG regulations.
- .5 Polyethylene Sheeting: 6 mil (0.15 mm) minimum thickness unless otherwise specified, in sheet size to minimize joints. New materials only.

### **PART 3 EXECUTION**

#### **3.1 General**

- .1 Do not contaminate building surfaces with PCBs.
- .2 Should visible PCB debris be observed outside the Work Area, immediately stop Work notify the Consultant and Owner; institute emergency procedures as directed. All costs incurred in decontaminating such non-Work Areas and the contents thereof shall be borne by the Contractor, at no additional cost to the Owner.
- .3 Notify Owner's Representative of any spills immediately.
  - .1 Any spills of PCBs are to be cleaned to the satisfaction of the Owner's Representative at the contractors cost. This includes removal and replacement of building materials as required.
- .4 Conduct PCB removal operations in a manner that fully protects Contractor's and Subcontractor's employees, the general public, other building occupants and the environment from exposure to PCB.
- .5 Non-PCB items remaining such as windows, doors, masonry, and all other building construction and components from which PCB materials are removed shall be decontaminated by physical or chemical means such that no visible residue remains. The removal of the PCB materials may require the use of scrapers, solvents, mastic removal chemicals, or other methods/procedures to ensure complete removal.
- .6 Use hand tools that generate the least amount of dust and will still complete the PCB caulk removal.

- .1 Grinding electromechanical tools (e.g. angle grinders, masonry groove cutters, circular saws, and slot mills, etc.) are not allowed to be used for exterior open-air PCB caulk removals.
- .7 Remove accessible caulk that could be disturbed before cutting building components.

### **3.2 Work Area Preparation - Exterior Removal:**

- .1 Take appropriate precautions (e.g. install windscreens) to prevent dust and debris from migrating due to windy conditions;
- .2 All work platforms and ground surfaces exterior to the work area shall have a layer of 6 mil fire retardant plastic sheeting, attached to the building face and laid down on the surface below the exterior abatement work area, at least 10 feet wide or to the furthest point of gravity fall for dislodged debris by methods used, whichever is further;
- .3 For work at the second storey and above, extend 6 mil fire retardant plastic sheeting as necessary;
- .4 All operable windows within the work area and 25 ft from all sides of the work area shall be closed;
- .5 In the work area, isolate all HVAC equipment intakes by temporarily shutting down units during removals and installing plastic sheeting over the opening; and
- .6 Do not commence contaminated work until authorized by the Abatement Consultant.

### **3.3 Removal of Caulking**

- .1 Remove caulking with non-powered tools.
- .2 Install polyethylene drop sheets in packaging area to protect surfaces and finishes.
- .3 Place PCB waste on polyethylene drop sheets immediately after removal.
- .4 Package PCB-containing caulking in Containment Drums, or on wood skids.
  - .1 Place caulking on end in Containment Drum. When full:
    - .1 Seal liner bag with duct tape;
    - .2 Seal drum with lid, gasket and compression ring;
    - .3 Affix specified and completed label; and
    - .4 Do not leave liner bags or drums open overnight.
- .5 Transport packaged PCB waste to a Ministry of the Environment approved incineration facility and destroy.

### **3.4 Equipment and Area Decontamination**

- .1 When removal of PCB materials is completed, the decontamination process shall consist of HEPA vacuuming, wet wiping/mopping and a repeated HEPA vacuuming of the entire work area. All surfaces in and around the work area must be free of dust generated during the work.
- .2 Decontaminate all tools and equipment before removal from the work area.
- .3 If dust or debris has migrated to areas of the building other than the immediate work area, those areas shall be incorporated into the work area and thoroughly decontaminated to ensure all visible dust generated by the activity is eliminated.
- .4 Uncontaminated dust barriers and other protective sheeting shall be placed in disposable construction bags and disposed of as normal trash.
- .5 Visually inspect the area for any remaining dust or debris. HEPA vacuum and wet wipe until space is clean. Dispose of vacuum contents as PCB waste.
- .6 Schedule and obtain written approval of Milestone Inspection - Site Dismantlement before removing temporary dust barriers.
- .7 Failure of any visual inspection by the Consultant, the Contractor will clean the affected areas at no additional expense to the Owner.

### **3.5 Transportation and Reporting**

- .1 All waste containers shall be fully enclosed and lockable (i.e. enclosed dumpster, trailer, etc.).
  - .1 While on-site, the container shall be labelled with PCB Warning Labels and as required by Federal and Provincial regulations.
- .2 All waste generated as part of the PCB project shall be removed from the site within ten (10) calendar days after successful completion of all PCB abatement work.
- .3 The Hauler, with the Abatement Contractor and the Abatement Consultant, shall inspect the transport container prior to the Hauler taking possession and signing the Hazardous Waste Manifests.
- .4 A Hazardous Waste Manifest shall be utilized solely as the waste Manifest for transportation. A hauler billing form or bill of lading may be used if the hauler needs an independent record, but shall not be used as a shipping document.
  - .1 The Manifest shall be completed by the Contractor and verified by the Consultant that all the information and amounts are accurate and the proper signatures are in place.
  - .2 The Manifest shall have the appropriate signatures of the Owner's Representative (the Generator) and the Hauler representative prior to any waste being removed from the site.

- .3 Upon arrival at the Disposal Site, the Manifest shall be signed by the Disposal Facility operator to certify receipt of PCB materials covered by the manifest.
- .4 The Disposal Facility operator shall return the original Manifest to the Owner's Representative (the Generator) as required by the Ministry of Environment.
- .5 Provide a copy of the completed waste manifest proving receipt of the PCB waste by the Disposal Facility.
- .5 Transport materials following Transportation of Dangerous Goods Act.
  - .1 Transport PCBs to approved incineration site for destruction and ensure materials are destroyed.
- .6 The facility used to process the PCBs shall be approved by the Ministry of the Environment and shall have valid Certificates of Approval to carry out the work outlined herein.
  - .1 The facility must issue a Certificate of Destruction identifying types and quantities of PCBs generated from the project.

## **END OF SECTION**

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