

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

NUMBER            SECTION DESCRIPTION

**DIVISION 02 EXISTING CONDITIONS**

SECTION 028214 - ASBESTOS REMEDIATION - FLOOR TILE AND MASTIC

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**DIVISION 02 EXISTING CONDITIONS**

**SECTION 028214 - ASBESTOS REMEDIATION - FLOOR TILE AND MASTIC**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes removal and disposal of asbestos-containing materials by full enclosure, glove bag, or entire structures methods as applicable. Demolition and debris removal of all asbestos-containing materials identified by provisions of this Section, or shown on drawings, or identified at the site, shall be executed under the provisions of this Section, and other applicable sections of these specifications.
- B. Extent of asbestos removal work is as follows:
  - 1. Indicated on drawings.
  - 2. Surveyed and listed in "Schedule of Items Containing Asbestos" Article in Part 3 of this Section.
  - 3. Surveyed and listed in "Schedule of Items Containing Asbestos" Article in Part 3 of this Section, as specified in related sections, and as indicated on the drawings. Proceed with Work of this Section simultaneously, and in coordination with, remaining Work of the Project.
  - 4. Marked at the site during the pre-bid inspection "walk through".
  - 5. Limited to that required to connect new plumbing work to existing piping.

**1.2 RELATED SECTIONS**

- A. Unit price items are scheduled with related units of measure in Division 01 Section "Unit Prices."
- B. Work of this Section that is affected by alternates is described in Division 01 Section "Alternates."
- C. Demolition and removal of items not containing asbestos as a component is included in Division 02 Section "Selective Demolition."
- D. Pipe re-insulation is included in Division 23 Section "Mechanical Insulation."

**1.3 DEFINITIONS**

- A. Asbestos Abatement Firm: Firm engaged to perform actual removal and disposal work, either as Contractor or subcontractor.
- B. Asbestos Containing Material: The term "asbestos containing material" is abbreviated ACM.
- C. Owner's Consultant: Firm engaged by Owner to identify and measure asbestos containing materials, or to inspect demolition operations, including monitoring of air quality.
- D. EHS: Owner's Environment, Health and Safety Department, 1239 Kipke Drive, Ann Arbor, MI 48109-1010; phone (734) 647-1143.

**1.4 SUBMITTALS**

- A. Initial Submittals: Submit the following documents to Owner's Representative at the pre-abatement meeting:
  - 1. Schedule of removal, specifying work locations, length and number of shifts, foreman's name, and crew size.
  - 2. Disposal Site Certification: Letter, signed by the Contractor, certifying that an approved asbestos-accepting type II landfill will be used for disposal. Include the facility name, address, and phone number.
  
- B. Waste Disposition Submittals: Submit to EHS signed waste shipment record stating that asbestos waste has been properly disposed. Submit the following:
  - 1. Receipts (trip tickets) from approved landfill.
  - 2. Asbestos Waste Shipment Record: As follows:
    - a. Prior to removing asbestos-containing material from the project site, provide Owner's Representative or Owner's consultant with a completed waste shipment record fully complying with Section 61.150 of the NESHAP standard, and 49 CFR Part 172.200 of the U.S. Department of Transportation, and including all required information.
    - b. Ensure that the landfill operator provides a signed copy of the waste shipment record to EHS within 35 days of the date that asbestos-containing material is removed from the project site. If waste is not transported directly from the project site to the landfill, the waste shipment record shall reflect each transfer.
    - c. The Owner will not make final payment prior to receipt of signed waste shipment record.
  
- C. Contract Closeout Submittals: Comply with the following additional requirements of Division 01 Section "Closeout Procedures":
  - 1. Asbestos Quantity Removal Report: Submit 3 copies of asbestos quantity removal report to Owner's Representative at least 4 weeks prior to Contractor's application for final payment. Include information in the following format:
    - a. Quantities of Asbestos Removed:
      - 1) \_\_\_\_\_ square feet of asbestos-containing floor covering and or mastic.
  - 2. Statement of Visual Inspection: Prior to application for final payment, submit to EHS a statement of visual inspection signed by the Contractor's competent person/supervisor. Include the following:
    - a. Name of contractor conducting work.
    - b. Name, signature, and title of on-site supervisor.
    - c. Name, location, and start and finish date of abatement work.
    - d. Current date.
    - e. Statement that the work was completed according to applicable federal, state, and local laws, and these specifications.
    - f. Statement that the Asbestos Abatement Firm's field supervisor has visually inspected the work site and has found no dust, debris, or other suspect asbestos-containing materials that were part of the scope of work.

**1.5 QUALITY ASSURANCE**

- A. Pre-Qualified Asbestos Abatement Firms: Engage one of the following pre-qualified firms to perform abatement of asbestos containing materials. Contact EHS for approval if a contractor is not on the list (i.e. flooring contractors trained specifically to remove floor tile).
  - 1. 21<sup>st</sup> Century Salvage Inc.
  - 2. Asbestos Abatement Incorporated
  - 3. BDS Environmental
  - 4. Certified Abatement Services, Inc.
  - 5. Detroit Dismantling Corporation
  - 6. Environmental Maintenance Engineers
  - 7. Environmental Specialty Services, Inc.
  - 8. Great Lakes Environmental Service, Inc.
  - 9. Homrich
  - 10. Innovative Environmental Solutions & Services DBA Paige Construction
  - 11. Michigan Mechanical Abatement, Inc.
  - 12. Midwest Environmental Inc.
  - 13. MIS Corporation-Michigan
  - 14. National Environmental Group, LLC
  - 15. Next Generation Environmental, Inc.
  - 16. Professional Thermal Systems, Inc.
  - 17. Rand Environmental Services
  
- B. Pre-Abatement Meeting: Approximately 2 weeks prior to scheduled start of the abatement project, the Owner's Representative will hold a pre-abatement meeting with the individuals indicated below:
  - 1. Contractor's representative.
  - 2. Asbestos Abatement Firm's representative.
  - 3. EHS representative.
  - 4. Owner's consultant.
  - 5. Owner's Representative.
  - 6. Owner's building maintenance personnel.
  
- C. The meeting agenda will include:
  - 1. Review of the scope of work.
  - 2. Removal methods to be used.
  - 3. Review of Contractor's initial submittals.
  - 4. A walk-through survey of the site, if appropriate.
  
- D. For small projects, the meeting may be suspended at the discretion of the Owner's Representative. If the meeting is suspended, deliver required initial submittals to the Owner's Representative's office 2 weeks prior to the start of work.

**PART 2 - PRODUCTS (NOT APPLICABLE)**

**PART 3 - EXECUTION**

**3.1 ASBESTOS ABATEMENT, GENERAL**

- A. Conduct asbestos abatement operations in a manner that fully protects Contractor's and subcontractor's employees, the general public, and building occupants from exposure to asbestos and other safety and health hazards.
  - 1. Asbestos abatement projects shall be directly supervised by a competent person as described in 29 CFR 1926.1101.
  - 2. The supervisor/competent person must complete responsibility checklists throughout all phases of the project.
- 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 asbestos work shall be conducted within a regulated area that complies with the following requirements:
  - 1. Post a sufficient number of signs required by 29 CFR 1926.1101 at the asbestos abatement area and at every work area entrance, so that tenants, Owner's personnel, and other contractor's employees have an opportunity to take protective measures before exposing themselves to asbestos. Place banners if necessary to secure open areas. Include information on signs indicating location and quantity of asbestos-containing material.
  - 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. When required, provide employees and inspectors authorized to enter the regulated area with protective work clothing consisting of disposable Dupont "Tyvek" (or equivalent) full body coveralls, head covers, boots, and other necessary safety gear, including a hard hat and eye protection.
- E. Provide respiratory protection to employees as required by current OSHA regulations including 29CFR 1910.134 and 1926.1101.
  - 1. Provide asbestos abatement workers with powered air purifying respirators (PAPR) with full facepiece and HEPA filters for adequate protection during asbestos material removal operations. Respiratory protection may be down-graded if negative exposure assessment indicates that less protection is required.

2. A half-face respirator or PAPR must be worn while tearing down and setting up enclosures, and during pre-cleaning and post-cleaning work.
3. Do not allow respirators to be pulled away from faces while in the work area.
4. Maintain an extra PAPR unit on site at all times for the duration of the abatement project.
5. Provide full facepiece supplied-air respirators operated in pressure demand mode equipped with air auxiliary and pressure self-contained breathing apparatus or HEPA egress filters if required for measured fiber concentrations.

F. 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.
7. CFR 1926.1101.
8. CFR, Part 61 (NESHAP).
9. Training Certificates and Medical Approval for each worker.

G. Use the following engineering controls and work practices for all asbestos abatement operations, regardless of measured exposure levels:

1. Vacuum cleaners equipped with HEPA filters to collect all asbestos-containing dust and debris.
2. Wet methods to control exposures during asbestos removal and clean-up, except where proven to be infeasible.
3. Prompt clean-up and disposal of asbestos-contaminated wastes and debris in leak-proof containers.

H. Do not use any of the following equipment or work practices during asbestos abatement operations, regardless of measured exposure levels:

1. High-speed abrasive disc saws not equipped with point-of-cut HEPA ventilation or HEPA filtered exhaust air enclosures.
2. Blowing with compressed air to remove asbestos-containing materials.
3. Dry sweeping, shoveling, or other dry methods to clean up asbestos-containing dust and debris.
4. Employee rotation as a means of reducing employee exposure to asbestos.

### **3.2 REMOVAL OF NON-FRIABLE ASBESTOS-CONTAINING MATERIALS**

A. Removal of Non-Friable Materials, General: For each type of non-friable asbestos-containing material indicated, comply with the following requirements:

1. Comply with requirements of Article 3.1 of this Section.
2. Conduct non-friable material removal operations to prevent the material from becoming friable during the removal and disposal process. No visible emissions are permitted. If the floor tile does not remain substantially intact, cease operations and contact EHS.

3. Do not conduct asbestos removal unless the Owner's Consultant is present at the site and EHS has been notified.
4. Labeling Containerized Waste: Label containerized asbestos waste in accordance with OSHA, EPA, and Department of Transportation regulations, as follows:
  - a. Label each container with OSHA label that contains the following information:

**DANGER  
CONTAINS ASBESTOS FIBERS  
MAY CAUSE CANCER  
CAUSES DAMAGE TO LUNGS  
DO NOT BREATHE DUST  
AVOID CREATING DUST**

- b. Label each container with Owner's and Asbestos Abatement Firm's names and addresses as required by NESHAP. Owner's address is EHS, 1239 Kipke Drive, Ann Arbor, MI 48109-1010.
    - c. Label each container with Class 9 Label required by DOT and identify waste as "RQ, Asbestos NA 2212."
5. Prepare a complete and accurate NESHAP Waste Shipment Record (special manifest). Assure all information required by the U.S. Department of Transportation regulation is included. Under "special handling instructions" provide the required DOT identification information: RQ Asbestos 9,NA 2212, PG III.
  - a. Do not remove waste from site until Owner's Representative has signed and verified the shipment record.
6. Remove containerized asbestos waste daily from site, or store on site in a locked or secured location until ready for final disposal. Obtain approval of Owner's Representative and EHS representative of the location of disposal containers. Outdoor waste containers shall be fully enclosed and locked. Mark vehicles used to transport waste during the loading and unloading of asbestos waste with a visible sign, as required by NESHAP.
7. Each container shall have excess water evident, or the asbestos waste shall be mixed in a slurry.

**B. Removal of Resilient Flooring Materials:**

1. Prior to removal, critical barriers shall be placed over openings to the regulated area. During removal, air in the regulated area shall be filtered through the use of air filtration device(s).
2. Removal of floor tile with an infrared heat machine eliminates the critical barrier and negative pressure requirements.
3. Prior to removal, clean floors of dirt and debris with vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (brush tools are not permitted). Control odors and fumes with engineering controls.
4. Sanding the floor or related backing is not permitted.
5. Mechanical chipping of vinyl floor tile is prohibited, except when performed in a negative pressure enclosure.
6. Thoroughly wet vinyl floor tile with amended water. Use a slip scraper or equivalent to loosen the floor tile from the floor. Remove the floor tile in an intact state. Keep the floor tile wet throughout the removal and cleanup.



- a. Removal of floor tile using an infrared heat machine eliminates the wetting requirement.
- 7. Remove vinyl sheet flooring by cutting while wetting the snip-point. Wet sheet flooring during delamination. Rip-up of resilient flooring material is not permitted.
- 8. Clean resilient flooring of all debris using a HEPA vacuum, wet sweeping, mopping or equivalent and allow time to dry. Dry sweeping is prohibited.
- 9. Place the resilient flooring material and debris in an asbestos disposal bag. Seal the bag and place it in a properly labeled drum or polyspun bag. Comply with the disposal and labeling requirements of this Section.

C. Asbestos Mastic Removal:

- 1. Clean the floor of all debris using a HEPA vacuum, wet sweeping, mopping or equivalent.
- 2. Remove as much mastic as possible using an EHS approved solvent. Control odors and fumes with engineering controls.
- 3. Perform scraping of residual adhesive and backing using wet methods.
- 4. After all debris is removed, thoroughly mop the floor and allow time to dry.
- 5. Shot blasting is prohibited, except when performed in a negative pressure enclosure.
- 6. Properly dispose of all asbestos and solvent waste according to all applicable regulations, and comply with the disposal and labeling requirements of this Section.

**3.3 FIELD QUALITY CONTROL**

- A. Pre-Notification of EHS Representative: To permit adequate time to schedule air monitoring, notify the EHS representative not less than 10 calendar days prior to planned start of all removal operations.
- B. Air Monitoring: Owner will retain a professional independent industrial hygiene consultant to collect air samples and oversee the project to insure that compliance with applicable codes, regulations, and ordinances, including 29 CFR 1926.1101, NESHAP, and P.A. 135. The consultant will collect background, contiguous, work area, personal, and post-abatement air samples. EHS will provide one copy of the report to the Contractor.
  - 1. If contiguous sampling indicates airborne fiber concentrations above 0.01 fibers/cc or background level, work will be stopped unless otherwise approved by EHS. Work may resume when the source of contamination has been corrected and the contamination has been cleaned to the satisfaction of the EHS.
- C. Inspection: If during the project, EHS representative or Owner's consultant determines that work practices either violate applicable rules and regulations or endanger employees, the Contractor's on-site representative shall stop operations immediately and take corrective action. Cooperate fully with EHS representative and Owner's consultant.

**3.4 SCHEDULE OF ITEMS CONTAINING ASBESTOS**

- A. Bidding Requirements: Comply with the following requirements related to bidding:
  - 1. Survey quantities provided are approximate. Bidders are required to field investigate as necessary and assume all responsibility to verify the work required and quantities involved for complete asbestos abatement.
  - 2. The building is open for field inspection by all bidders during the bidding period.
  - 3. A "pre-bid orientation meeting" will be conducted to familiarize prospective bidders with site conditions and provide for verification of marked and scheduled quantities, as applicable.
  
- B. The following items have been surveyed and determined to have asbestos as a component:
  - 1. Vinyl asbestos floor tile.
  - 2. Composition sheet flooring.
  - 3. Flooring adhesives.

**END OF SECTION 028214**