

SECTION 02 0820- REMOVAL OF ASBESTOS-CONTAINING EXTERIOR MATERIALS

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 - GENERAL REQUIREMENTS which are hereby make a part of this Section of the Specifications.

1.02 EXISTING CONDITIONS

The renovation project as specified by Christopher Williams Architects involves new roofing and minor roof intrusions for MEP installation. The areas of renovation work were inspected by Mystic Air Quality Consultants. Suspect material were sampled and analyzed with results as follows;

Sample #	Material/Location	Affected Area
1-2	Glue Only/Roofs 1,2 & 5- Rubber Membrane	12,853 sqft
7-8	Hard Black Flashing Mastic/Roofs 1-5-around penetrations. Edge of roofs and sidewalls	>100 sqft
15	Built-Up Roofing/Roof #2- edge of roof at bottom of siding to roof #1	80 sqft
16-17	Built-Up Roofing/Roof #2- under insulation	6,648 sqft

1.03 DESCRIPTION OR WORK

The work of this section includes, but is not necessarily limited to, the following:

1. Select removal and disposal of asbestos-containing roof field and flashing materials as required to in the renovation as described in the architectural drawings.

1.04 PERMITS AND INSPECTIONS

It is the Contractor's responsibility to secure all necessary permits and send out proper notifications in conjunction with asbestos removal, hauling and disposition and timely notification of such actions, as may be required by Federal, State and Local Authorities.

1.05 SUBMITTALS

Before the commencement of the required work, the Contractor shall provide the Owner with copies of medical surveillance records for employees who will be wearing negative pressure respirators, written respiratory protection program and applicable notifications for the project.

Contractor may provide negative exposure data for similar work in an effort to satisfy OSHA regulations.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Amended Water: Provide water to which a surfactant has been added. The amended water shall be a mixture of 50% polyoxyethylene ester and 50% polyoxyethylene ether, one ounce mixed with five gallons of water, or approved equal.
- B. Encapsulants: An approved bridging encapsulant/lockdown sealant meeting or surpassing Battelle Columbus Laboratories' "Tests for the Evaluation of Encapsulants for Friable Asbestos Containing Materials" test procedures and rating requirements will be sprayed on all post-removal surfaces using an airless sprayer at low pressure. The encapsulant solvent or vehicle shall not contain a volatile hydrocarbon. The chosen encapsulant must be compatible with the replacement materials and must conform to the proper edition of applicable fire and electrical standards. These codes include, but are not necessarily limited to:
1. National Fire Prevention Association - Codes 90a 2-1.3.1 through 3-3.8.1
 2. National Electrical Code - Code 300-21
- C. Clothing: Personnel involved with any operations that involve cutting, breaking, or abrading of asbestos roof materials shall wear special clothing such as overalls or similar whole body clothing, respirators, gloves head and foot coverings. This also applies to the cleaning of friable, roof material debris. Contaminated clothing will be treated as asbestos material and undergo the same disposal procedures. Disposable clothing will be flame-retardant treated.

2.02 EQUIPMENT

- A. General: The Contractor shall furnish equipment, tools and clothing necessary to perform the work in a safe and expeditious manner. Power equipment shall conform to OSHA Standard 1910.95 Occupational Noise Exposure with the exception that personnel, including the Contractor's shall never be exposed to a noise level higher than 85 dB for an eight-hour duration.
- B. Power Tools: Power tools such as rotating blade roof cutters **are not allowed** to cut or otherwise disturb asbestos materials.
- C. Vacuum and Exhaust Equipment: Vacuum equipment shall have filtering in conformance with ANSI z9.2. Filters of different materials are permitted upon submissions of a certificate of compliance with ANSI z9.2. No bypass devices are allowed. Provision will be made to empty the collection containers without creating visible emissions of particulate matter.

2.03 RESPIRATORY PROTECTION

- A. General: Respiratory protection will be worn by Contractor personnel involved with any operations that involve cutting, breaking, or abrading of asbestos materials. This also applied to the cleaning of friable roofing materials. Respiratory protection will be MSHA/NIOSH approved according to the provisions of 30 CFR Part 11. Respiratory protection will be provided by the contractor, and used by workers in conjunction with the written respiratory protection program.
- B. Respiratory Selection: The Contractor shall provide respirators selected by an Industrial Hygienist that meet the requirements of 29 CFR 1926.1101.

- C. Issuance: Workers will be provided with personally issued and individually marked respirators. Respirators shall not be marked with any equipment that will alter the fit of the respirator in any way. Only waterproof identification markers will be used.
- D. Fit Tests and Checks: The Contractor shall ensure that the workers are qualitatively or quantitatively fit tested by an Industrial Hygienist initially and every six (6) months thereafter with the type of respirator he/she will be using. Whenever the respirator design permits, workers shall perform the positive and negative air pressure fit test each time a respirator is worn. Powered air-purifying respirators will be tested for adequate flow as specified by the manufacturer. No facial hair will be allowed on any person wearing respiratory protection that requires a mask-to-face seal.

PART 3 - EXECUTION

3.01 SCOPE OF WORK

- A. The contractor shall establish the immediate window glazing work areas as a regulated work (via barrier tape) area in accordance with 29 CFR 1926.1101. The regulated area need only encompass the area immediately surrounding the area undergoing removal of ACM and should be established in a way to be the least restrictive to other activities. The regulated area can be discontinued immediately upon completion of the days ACM removal work.
1. Window work shall require asbestos contractor to install critical barrier on the interior.
- B. Any contractor personnel directly involved with any operations that involve cutting, breaking or abrading of the asbestos-containing materials shall be issued, at a minimum, a half-face negative pressure respirator equipped with HEPA cartridges and TYVEK suits that will be worn during such work. Workers assigned respirators must be provided medical surveillance according to OSHA 29 CFR 1926.1101. The Contractor is also required to maintain a written respirator program per OSHA 29 CFR 1910.134.
- D. The contractor shall establish an equipment area as defined in 29 CFR 1926.1101 consisting of an impermeable drop cloth of sufficient size as to accommodate cleaning of equipment and removing of personal protective equipment without spreading contamination beyond the area. Protective clothing shall be HEPA vacuumed before it is removed. All equipment and containers holding asbestos materials must be cleaned in the equipment area prior to removal from the regulated area. Contractor personnel removing asbestos-containing roofing materials shall enter and exit the regulated area through the equipment area.
- E. The following work practices are required regardless of a Negative Exposure Assessment:
1. Work shall be supervised by a Competent Person as defined in 29 CFR 1926.1101.
 2. ACM shall be removed in an intact state to the extent feasible.
 3. Wet methods shall be used except where the use of water may present a safety hazard (i.e., below freezing temperatures)
 4. Dust and debris remaining within work area shall be collected immediately using a HEPA vacuum.
 5. Roof level heating and ventilation intake sources in the work area shall be shut down and sealed with sheet plastic.
 6. Upon removal, the ACM shall either be kept wet, placed in an impermeable waste bag or wrapped in sheet plastic

F. Until a NEA has been obtained the following work practices shall be followed:

1. Contractor personnel directly involved with any operations that involve cutting, breaking or abrading of the asbestos-containing materials shall be issued, at a minimum, a half-face negative pressure respirator equipped with HEPA cartridges and TYVEK suits that will be worn during such work. Workers assigned respirators must be provided medical surveillance according to OSHA 29 CFR 1926.1101. The Contractor is also required to maintain a written respirator program per OSHA 29 CFR 1910.134.
2. The contractor shall establish an equipment area as defined in 29 CFR 1926.1101 consisting of an impermeable drop cloth of sufficient size as to accommodate cleaning of equipment and removing of personal protective equipment without spreading contamination beyond the area. Protective clothing shall be HEPA vacuumed before it is removed. All equipment and containers holding asbestos materials must be cleaned in the equipment area prior to removal from the regulated area. Contractor personnel removing asbestos-containing materials shall enter and exit the regulated area through the equipment area.

G. Disposal

Disposal shall comply with State of CT DOHS, DEP, EPA and DOT regulations.

3.03 ELECTRICITY REQUIREMENTS

The Contractor's equipment shall meet electrical codes and be maintained in good condition. Ground fault circuit interrupters will be used on power cords. The licensed electrician must restore electrical facilities to their original condition at project completion.

3.04 TESTING

Personal Air Sampling: Personal sampling will be the responsibility of the Contractor to check personal exposure levels versus respiratory protection and to check work practices. At least 25% of the workers in each shift, but not less than 2, shall be sampled. Personal sampling pumps should have a flow rate of two (2) liters per minute and sample duration will be as close to an eight-hour workday as possible.

Pump flow rates will be pre and post calibrated. The Contractor is responsible for his personal sampling as outlined in OSHA Regulation 1926.1101. The Contractor shall post the personal air sample results within 24 hours. Contractor personal samples will be analyzed according to the OSHA 1926.1101 reference method. The analytical laboratory used by the Contractor shall be AIHA accredited for asbestos analytical work.

END OF SECTION 02 0820