

**SECTION 02071 - REMOVAL OF ASBESTOS CONTAINING ROOFING MATERIAL
(Rev.9/00)**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions, Special Conditions and Division 1 Specification Sections, apply to this Section.
- B. Refer to Drawing C-1, "Existing Roof System Components Chart" for location of asbestos containing roofing materials.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the removal and disposal of intact, non-friable asbestos containing roofing material, including:
 - 1. Roof membrane.
 - 2. Flashings.
- B. The requirements of this Section assume that a rotating blade (RB) roof cutter will be utilized for the removal of the roof membrane and/or flashing, and the area of asbestos containing roof membrane and/or flashing to be cut with the RB roof cutter exceeds 5580 square feet.
 - 1. The use of a rotating blade roof cutter or other mechanical equipment may cause vibration of the structural roof deck that may impact other asbestos containing material below the roof deck (i.e. sprayed on fireproofing or acoustical plaster). Such other materials may not be identified in these Contract Documents and it shall be the responsibility of the Contractor to assess the existing conditions and bring any potentially asbestos containing materials that may be disturbed to the attention of the Owner prior to bidding. Further, it shall be the responsibility of the contractor to periodically monitor the condition of any asbestos materials during construction, and immediately report any damage to the Owner's Project Manager and the project's REHS representative.

1.3 REGULATORY REQUIREMENTS

- A. Removal and disposal shall be performed in accordance with applicable State and Federal regulations, including:
 - 1. Occupational Safety and Health Administration (OSHA) Standard for Construction; 29 CFR 1926.1101 Asbestos.
 - 2. U.S. Environmental Protection Agency's (EPA) National Emission Standards for Hazardous Air Pollutants for Asbestos (Asbestos NESHAP); 40 CFR Part 61, Subpart M.
- B. Additional requirements provided in this section are intended to supplement, in some cases exceeding, current State and Federal requirements, but do not relieve the Contractor of responsibility for complying with all current regulations.

1.4 NOTIFICATIONS

- A. Provide written notification as required, at least ten (10) working days prior to the start of roof removal, to all necessary agencies or persons, including the following:
 - 1. New Jersey Department of Environmental Protection (DEP)
Bureau of Resource Recovery & Tech. Programs
P.O. Box 414
Trenton, NJ 08625
 - 2. Asbestos NESHAPS Notifications
US EPA, Air Compliance Branch
290 Broadway, 21st Floor
New York, NY 10007

1.5 SUBMITTALS

- A. Provide the Owner with copies of all required notifications.
- B. Provide the Owner with copies of air-monitoring laboratory test results, when performed.
- C. Prior to the start of work, submit the names, addresses and telephone numbers of the proposed asbestos waste transporter and disposal facility for Rutgers University review and approval. Rutgers University reserves the right to reject proposed transporters. The Contractor may contact REHS prior to bidding to obtain names of acceptable asbestos waste transporters. The proposed disposal facility must be one of the pre-approved facilities provided in these specifications.
- D. Submit copies of all waste manifests documenting the proper transport and disposal of all asbestos containing material to the Owner within 30 days after removal from the work site.

1. **No payments will be made to the Contractor for any roof system removal costs until manifests are received.**
2. Submit the original "Generator/Customer" copy, fully executed by all parties, including generator, transporter and disposal facility. Submit, along with a transmittal form, to the Owner's Project Manager. Simultaneously submit a photocopy and a copy of the transmittal to the project's designated Rutgers Environmental Health & Safety (REHS) representative.

- E. Prior to the start of work, the Contractor shall submit written certification to the Owner that all workers and supervisors being utilized for this project have received all training required by OSHA, EPA and Article 1.6 of this Section.

1.6 QUALITY ASSURANCE

- A. All workers involved with removal and handling of ACRM must be trained, in accordance with OSHA and EPA requirements, including eight (8) hour (minimum) baseline training, "hands-on" training and two (2) hour (minimum) annual "hands-on" refresher training.
- B. Supervisors for removal of ACRM must be trained in accordance with OSHA and EPA requirements, including AHERA five (5) day supervisor training, or other regulatory agency accepted courses, and eight (8) hour AHERA annual refresher training, or other regulatory agency accepted courses.

1.7 PROJECT CONDITIONS

- A. Owner will occupy the building during removal of ACRM. Conduct removal operations so that Owner's operations will not be disrupted and building occupants and pedestrians in the vicinity are protected. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations or require re-routing of occupants or pedestrians.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Prior to the start of work, perform an initial exposure assessment to develop a negative exposure assessment.

1. Develop a negative exposure assessment, whenever possible, based on National Roofing Contractors Association (NRCA) data compilation, provided material is intact (non-friable), worker training requirements are met and required roof removal methods are to be used.
2. Conduct air monitoring to supplement the exposure assessment as deemed appropriate by the competent person and whenever one or more conditions in 3.1.A.1 are not met.

3.2 PREPARATION

- A. Locate dusty activities/equipment, such as dumpsters, chutes, etc., as far away from all HVAC equipment and building entrances as possible.
- B. Plan removal activities occurring near HVAC equipment and building entrances well in advance, during off-hour occupancy times whenever possible, with adequate notification to the Owner.
- C. All outdoor air intakes in the vicinity of removal operations shall be covered to prevent the entrance of dust or other contaminants.
 1. Coordinate with the Owner to arrange for the shut-down of mechanical equipment or outside air dampers.
 2. Cover all outside air intake louvers, grilles and openings with plastic sheeting. Seal all edges and laps in the sheeting with duct tape.
 3. Limit shut-downs and covering of air intakes to the shortest duration possible.

3.3 REMOVAL OF ACRM

- A. Manual methods that do not excessively damage the material shall be used to the greatest extent possible.
 1. Acceptable manual methods include the use of spud, spade, flat-blade or slicing tools (such as axes, mattocks, pry bars, crowbars, shovels, flat-blade knives and utility knives) to slice, strip-off, shear-under or pry-up the material.
- B. Sanding, grinding, abrading and cutting with serrated-edge hand tools, such as handsaws, or power tools, except as provided below, are prohibited.
- C. Mechanical methods that are permitted include the use of power removers, power tear-off machines and rotating blade (RB) roof cutters.

1. Rotating blade (RB) roof cutters must have a blade guard that completely encloses the blade and extends down close to the surface of the roof. In addition, the RB roof cutter must be equipped with a device that continually sprays a fine mist of water inside the blade guard during operation.
2. Power removers and power tear-off machines may be used to pry roofing material off the roof deck, after the material has been cut into sections with the RB roof cutter.
 - a. Rutgers University reserves the right to prohibit the use of this equipment when friable, or potentially friable, asbestos containing surfacing materials are applied to the underside of the roof deck, when Rutgers University believes the use of this equipment may damage the surfacing materials.

3.4 MATERIAL COLLECTION & HANDLING

- A. Dust and debris generated by the RB roof cutter shall be collected, double-bagged and labeled, without allowing the material to dry out or contaminate remaining intact (non-friable) material before collection.
 1. Immediately collect or vacuum up the dust and debris where it lies along the cut, using a HEPA vacuum cleaner or HEPA dust collector that meets the requirements of 40 CFR 61.152, or gently sweep up the bulk of the debris, and then use a HEPA vacuum cleaner that meets the requirements of 40 CFR 61.152 to clean up the remainder of the debris.
 - a. On smooth-surfaced roofs (non-aggregate roofs), sweeping up the debris and then wet wiping the roof surface to clean the remainder is acceptable in place of using a filtered vacuum cleaner.
 2. All dust and debris generated by the RB roof cutter shall be placed inside two (2) 6-mil polyethylene asbestos waste bags.
- B. Removed ACRM shall be carefully handled and stacked without throwing or intentionally breaking or crushing the material.
- C. All removed ACRM must be removed from the roof as soon as practical, but not later than the end of the work shift.
- D. Material must be carefully lowered to the ground via hoist, crane, enclosed chute, or be hand carried or passed.

3.5 DISPOSAL OF ACRM

- A. All ACRM, including both intact (non-friable) and non-intact (friable) material, shall be segregated from other construction debris, legally transported and disposed of at one of the following pre-approved landfills:
1. G.R.O.W.S., Inc.
1513 Bordentown Road
Morrisville, PA 19067
 2. Tullytown Resource Recovery Facility
200 Bordentown Road
Tullytown, PA 19007
 3. S&S Landfill, Inc.
Route 5, Box 559
Clarksburg, WV 26301
 4. Grand Central Sanitary Landfill, Inc.
1963 Penn Argyl Road
Penn Argyl, PA 18072

END OF SECTION 02071