I. Introduction

Asbestos is a generic name that refers to the following family of naturally occurring fibrous hydrated silicate minerals: chrysotile, amosite, crocidolite, anthophyllite, tremolite, and actinolite. Asbestos exhibits the following characteristics: good insulating properties, heat resistance, chemical resistance, and the ability to be woven into fabrics. As such, asbestos was incorporated into many building materials and installed during new construction. However, epidemiological studies published in the 1960’s and early 1970 have shown associations between occupational asbestos exposure and pulmonary diseases such as lung cancer, asbestosis, and mesothelioma. The occurrence of these diseases is influenced by the type of asbestos mineral fiber, the size of the mineral fiber, as well as the concentration and duration of airborne asbestos exposure. Asbestos-related diseases do not develop immediately after inhalation of asbestos fibers; it may take 20 or more years for symptoms of these diseases to appear. As a result of these studies, asbestos is classified a confirmed human carcinogen, and regulated by various federal and state agencies to protect the public health and the occupational workforce.

The mere presence of asbestos in a building does not mean that the building occupants are endangered; intact and undisturbed asbestos containing materials do not pose a health risk. In 1988, the Environmental Protection Agency evaluated various asbestos control and abatement (removal) actions to help building owners manage asbestos containing materials in their facilities, to alleviate unwarranted fears about the mere presence of asbestos in buildings, and to discourage spontaneous decisions to remove all asbestos containing material regardless of its condition. In 1990, EPA issued a guide titled Managing Asbestos In Place, which
expanded upon and refined previous EPA guidance documents. This guide emphasizes the importance of in-place management as opposed to asbestos abatement, and stated that a properly conducted operations and maintenance (O&M) program is as appropriate, if not more appropriate, than asbestos abatement. In addition, this guide communicates the following "five facts" (reprinted exactly below):

1. Although asbestos is hazardous, the risk of asbestos-related disease depends upon exposure to airborne asbestos fibers.
2. Based upon available data, the average airborne asbestos levels in buildings seems to be very low. Accordingly, the health risk to most building occupants also appears to be very low.
3. Removal is often not a building owner’s best course of action to reduce asbestos exposure. In fact, an improper removal can create a dangerous situation where none previously existed.
4. EPA only requires asbestos removal in order to prevent significant public exposure to airborne asbestos fibers during building demolition or renovation activities.
5. EPA does recommend a pro-active, in-place management program whenever asbestos-containing material is discovered.

The Rowan University Asbestos Management Program incorporates these "five facts" as the basis for its Asbestos Management Policy, as well as other regulations to protect its employees, outside contractors, and visitors from asbestos hazards. This document describes the procedures and practices for managing asbestos at Rowan University, including:

- department and employee responsibilities,
- identification of asbestos containing materials,
- asbestos hazard evaluations and assessments,
- training requirements, and
- asbestos abatement projects.

II. Regulatory Compliance

The following summarizes state and federal regulations controlling various asbestos activities.

N. J. Department of Community Affairs, Asbestos Hazard Abatement Subcode (N.J.A.C. 5:23-8)

- Establishes standards and procedures for asbestos hazard abatement work in educational facilities and public buildings to provide for public health, safety, and welfare. This subchapter controls asbestos abatement construction permit conditions, enforcement, required inspections, and air monitoring.

N. J. Department of Labor, Asbestos Licenses and Permits (N.J.A.C. 8:60 and 12:120)

- Establishes licensing requirements, in conjunction with the N. J. Department of Health and Senior Services, for asbestos abatement contractors and workers. This regulation also requires that asbestos abatement contractors notify the Department of Labor 10 days prior to commencement of asbestos abatement activities (repair or removal) greater than or equal to 3 linear or 3 square feet of asbestos containing material.

N. J. Department of Environmental Protection, Waste Disposal Regulations (N.J.A.C. 7:26)

- Establishes requirements for disposal of waste generated by asbestos removal activities.

OSHA Construction Standard, Asbestos (29 CFR 1926.1101)
• Regulates occupational asbestos exposure during demolition activities, asbestos abatement work, construction and renovation work, maintenance and repair activities, or other work that results in asbestos exposure. This regulation establishes requirements for permissible exposure limits, engineering and workplace controls, respiratory protection, training, and medical monitoring. The N. J. Department of Labor (PEOSH) adopted this standard by reference on August 5, 1996.

• Establishes notification and emission control requirements to minimize airborne asbestos emissions during demolition, renovation, and asbestos removal activities; also establishes requirements for waste disposal generated by these activities.

Asbestos Containing Materials in Schools (40 CFR Part 763, Subpart E) (AHERA)
• Establishes methods for the identification, classification, and assessment of asbestos containing building materials, as well as implementation of asbestos management plans, for public and non-profit schools (K-12). This regulation does not apply to colleges; however, amendments to this regulation effective in 1994 requires that any person who inspects for asbestos, or designs or conducts removal work, must successfully complete an EPA accredited training course.

III. Department Responsibilities for Asbestos

To effectively manage asbestos containing materials and prevent asbestos exposures, the Rowan Asbestos Management Program requires participation by all members of the university community. The overall responsibility for implementing this program is shared between the Rowan Environmental Health and Safety (EHS) and Rowan Facilities. The following summarizes the key duties and responsibilities for each of these departments.

EHS (Campus Specialist Staff)
• Surveys, inspects, and assesses presumed asbestos containing material (PACM) and asbestos containing material (ACM) in university buildings
• Provides written notification to building occupants and staff of asbestos survey results, proposed asbestos hazard abatement projects, and completed asbestos abatement activities conducted in university buildings
• Provides asbestos awareness training to university employees that may have direct contact with asbestos containing building materials during their normal work activities
• Provides information to the university administration to support decisions on asbestos abatement projects and the asbestos management program
• Provides expertise and guidance to the Facilities Department to maintain compliance with regulatory requirements and university policy and to define the scope of asbestos abatement work
• Monitors the progress of asbestos abatement projects performed by asbestos abatement contractors, as necessary
• Evaluates the qualifications of asbestos abatement contractors and asbestos safety control monitors, as well as specifications and requirements for asbestos abatement projects
• Monitors and assesses airborne asbestos exposures to students, faculty, and staff
• Maintains documentation on asbestos surveys, assessments, abatement projects, air monitoring, and asbestos exposures
• Communicates effectively with regulatory agencies as needed, as well as the Rowan Public Information Department, the Rowan community, and general public

A. EHS (Asbestos Abatement Manager)

• Schedules asbestos abatement work requested by Facilities, as well as asbestos abatement contractors and asbestos safety control monitors necessary to complete this work
• Notifies the Director of Facilities Maintenance and the Chief of Rowan University Police of all scheduled asbestos abatement work
• Notifies the Union Safety Representative of proposed and successfully completed asbestos abatement work and air monitoring results.
• Prepares documents and specifications as needed for asbestos hazard abatement projects
• Schedules all meetings necessary for asbestos hazard abatement projects
• Retains approved and licensed asbestos abatement contractors and asbestos safety control monitors to complete asbestos abatement work
• Assures that the heating, ventilation, and air conditioning units in buildings scheduled for asbestos abatement work are turned off prior to and for the duration of asbestos abatement work, as needed
• Assures through the asbestos safety control monitor that asbestos waste generated during asbestos hazard abatement projects is properly disposed

B. Facilities Maintenance, Project Administration

• Requests asbestos surveys and assessments from EHS prior to planned maintenance and renovation activities which may impact PACM or ACM
• Defines the scope of work necessary for maintenance and renovation projects, and requests estimates and scheduling of asbestos abatement from EHS
• Provides identification, descriptions, drawings, and other documentation to EHS to facilitate budget estimates and scheduling of asbestos removal work
• Notifies building occupants of asbestos abatement work scheduled through EHS
• Identifies building coordinators or contacts to EHS for building occupant notification required for asbestos hazard abatement projects in occupied buildings
• Identifies employees requiring asbestos awareness training and assures that new custodial and maintenance employees receive this training within 60 days after beginning employment at Rowan University
• Ensures employee attendance at required training sessions, and implements elements of the training program in their daily work activities
• Conducts work activities in a manner to prevent damage to or disturbance of PACM or ACM
• Reports damaged PACM or ACM to their supervisors and EHS to arrange for surveys and assessments, as required
• Reports maintenance or proposed work activities to their supervisor and EHS which may result in airborne asbestos exposures; arranges for assessment and monitoring of these work activities prior to work commencement
• Complies with this asbestos management program
IV. **Rowan University Employee Responsibilities**

An effective asbestos management program requires the participation of all members of the university community, and an understanding of each employee’s responsibility within this program. Rowan University employees **shall not** perform work activities that disturb presumed asbestos containing materials (PACM) and confirmed asbestos containing materials (ACM); in addition, Rowan University employees **must** avoid all activities that could result in damage to or disturbance of these materials. If an employee believes their assigned work activities will disturb PACM or ACM, the employee must notify their supervisor immediately. The supervisor must evaluate the work activities and suggest alternate work methods that will not disturb PACM or ACM. If alternate work methods cannot be developed that avoid damaging or disturbing ACM, then the supervisor must postpone the scheduled work activities until the ACM is removed.

Currently, licensed asbestos abatement contractors perform all asbestos abatement work at Rowan University. EHS is available to develop and review work practices performed by Rowan University employees for activities which result in contact with ACM; however, work practices must be developed and approved on a case-by-case basis that, at a minimum, complies with all state and federal regulations. Until these specific work practices are developed, the following guidelines **must** be observed by all employees to avoid damage to or disturbance of asbestos containing material:

A. **Directors**
   - Ensures supervisors, project managers, and planner/estimators review and comply with provisions of this asbestos management policy.
   - Ensures employees receive appropriate training and supervision to maintain compliance with this document.
   - Ensures building occupants are notified of planned and scheduled asbestos abatement (removal) work within their buildings.

B. **Supervisors, Project Managers, Planner/Estimators**
   - Requests asbestos survey information on building materials impacted by planned maintenance and renovation activities.
   - Defines the scope of the maintenance and renovation projects.
   - Requests estimates and coordinates scheduling of asbestos abatement work with EHS and the building occupants.
   - Notifies building occupants of planned asbestos abatement work for maintenance and renovation activities.
   - Ensures their employees attend asbestos awareness training as required and ensures employees implement the elements of this training in their daily work activities.
   - Contacts EHS to assess potential employee exposures prior to initiation of work activities.
   - Reports incidents that damage asbestos containing materials and asbestos debris discovered in buildings.
   - Attends required training and complies with the asbestos management program.

C. **Maintenance and Custodial Workers**
   - Before starting work, consult with your supervisor to determine if asbestos will be impacted by your work activities.
   - Carefully plan and complete your work to avoid damaging asbestos.
   - Immediately report any suspected asbestos exposure or damaged asbestos in your work area to your supervisor.
   - Attend required training necessary to perform your work activities.
• Do not drill, sand, or cut into asbestos containing materials.
• Do not sweep or vacuum asbestos containing debris.
• Do not store materials against asbestos containing materials or damage asbestos while moving furniture or other objects.
• Do not eat, drink, or store food in areas containing friable asbestos containing materials.

V. Asbestos Training

All maintenance and custodial employees that may have direct contact with asbestos containing materials during their normal work activities must receive asbestos awareness training. Asbestos awareness training provides information about asbestos, the health effects associated with asbestos exposure, safe work practices to prevent disturbance of asbestos containing building materials, and elements of the Rowan University Asbestos Management Program.

All new custodial and maintenance employees must receive this training within 60 days after beginning employment at Rowan University; all custodial and maintenance employees are required to attend annual asbestos awareness training.

VI. Asbestos Identification and Surveys

To prevent work activities that release airborne asbestos fibers or result in asbestos debris, building materials must be surveyed and assessed to determine if they contain asbestos prior to initiation of work activities. Supervisors, project managers, and planner estimators anticipating maintenance, renovation, or construction work activities in a building must do the following:

• Contact EHS to obtain asbestos survey information for the building materials impacted by the proposed work activities. Identify all proposed work, alternates, and other pertinent information.

• Meet with the EHS Health and Safety Specialist to review your work activities and to identify the building materials to be sampled. EHS will provide available asbestos survey information and arrange to collect additional samples as necessary.

• EHS shall provide a verbal and written summary of results and recommendations to the person requesting the asbestos survey, and a copy will be sent to the employee supervisor for their records.

VII. Contractor and Employee Notification

OSHA requires building owners provide written notification to contractors that identifies ACM at a work site prior to commencement of any activities impacting building structures or substrates. To comply with these notification requirements, Rowan University will employ the following procedures:

• The Rowan University project manager, engineer, or Project Manager will provide a copy of the EHS asbestos survey memo or report to all contractors and employees prior to commencement of their work activities.

• All asbestos abatement work at Rowan is performed by licensed asbestos abatement contractors in accordance with N.J.A.C. 5:23-8, the Asbestos Hazard Abatement Subcode. Contractors are prohibited from performing asbestos removal work or other activities that damages or disturbs asbestos. All asbestos abatement work required by contractors shall be identified to the project manager, and scheduled through the EHS Asbestos Abatement Manager. The EHS Asbestos Abatement Manager will provide written notification to the project manager, regional engineer, or
planner estimator upon successful completion of asbestos abatement work, indicating when the work was completed as well as clearance air sample results, if collected.

- If an outside contractor or a Rowan University employee discovers building materials that are not identified in the asbestos survey during the execution of their work, the contractor and/or university employee shall:
  1. Immediately notify the Rowan University project manager or engineer and
  2. Refrain from work activities that damage or disturb these materials. The project manager or engineer must call EHS immediately to arrange for an asbestos inspection of these materials.

OSHA also requires building owners post signs at mechanical room entrances that contain either PACM and/or ACM.

All Rowan University maintenance and custodial employees receive annual asbestos awareness training that instructs them to treat any building material as asbestos containing until bulk sample analysis determines that it does not; in addition, this training also instructs employees not to damage or disturb any presumed asbestos containing material (PACM).

VIII. **Asbestos Assessments**

Asbestos containing building materials must be periodically assessed to monitor changes in their physical condition. EHS staff annually inspects the asbestos containing surfacing (ceiling) materials in academic buildings and residence housing. During these inspections, EHS staff records visual damage, changes to the physical condition of these materials, and recommends appropriate response actions to repair or remove damaged ACM and return it to an intact condition. Occupants in dormitories with ACM surfacing materials are notified when they move in that the ceiling contains asbestos, are instructed how to keep these materials intact, and are encouraged to report any damage immediately to the Housing office or EHS.

Maintenance staff is instructed during asbestos awareness training to immediately report all damaged ACM’s to their supervisor and EHS whenever they are observed during their normal work activities. EHS staff also records damaged ACM observed during normal work activities, and arranges for an appropriate response action, including notification of building occupants and maintenance staff.

IX. **Asbestos Abatement Projects**

Licensed asbestos abatement contractors perform all asbestos abatement activities at Rowan University in accordance with N. J. A. C. 5:23-8, which is commonly referred to as subchapter 8. Asbestos abatement projects consist of operations where:

1. ACM is stripped from structures or substrates;
2. ACM is encapsulated to minimize airborne emission of asbestos fibers;
3. disturbed asbestos containing materials are repaired to an intact state and debris is cleaned up; or
4. ACM is enclosed within an airtight, impermeable, permanent barrier.

Typically, these projects are initiated whenever:

- Planned maintenance or renovation activities are scheduled that damages or disturbs asbestos containing material, or
- Damaged or significantly damaged (> 10% of a building material) asbestos containing material is discovered which may result in exposure to employees, faculty, or staff.

Asbestos abatement work activities can be further subdivided into three groups:

- Operations and Maintenance Activities
- Asbestos Hazard Abatement Projects
Operations and Maintenance Activities

Subchapter 8 defines Operations and Maintenance (O&M) Activities as corrective actions, not intended as asbestos hazard abatement projects that remove either less than 25 square feet of friable ACM on any equipment or surface area, or less than 10 linear feet of friable ACM on covered piping. Operations and Maintenance activities do not require a construction permit, a certificate of occupancy, or clearance air monitoring conducted at the conclusion of the work. The N. J. Department of Labor requires asbestos abatement contractors provide notification 10 calendar days prior to removal of greater than 3 square or 3 linear feet of asbestos containing material for O&M activities. At the conclusion of O&M asbestos removal projects, EHS visually inspects each work area to ensure no visible debris is present. EHS also reserves the right to perform clearance air monitoring to consider O&M activities successfully completed; this determination is made on a case-by-case basis, and depends upon the nature of the removal work, building occupancy, and other factors. The decision to require clearance air monitoring is made prior to initiation of the O&M asbestos removal project.

Asbestos Hazard Abatement Projects

In almost all instances, asbestos hazard abatement projects precede renovation activities by a general contractor to prevent the unauthorized removal or disturbance of asbestos containing materials. Subchapter 8 defines Asbestos Hazard Abatement Projects as: (1) The removal, enclosure, or encapsulation of greater than 25 square feet of ACM on any equipment or surface area, or (2) The removal or encapsulation of greater than 10 linear feet of ACM on covered piping. Asbestos Hazard Abatement Projects require an asbestos abatement construction permit and building occupant notification. Building occupant notification is a condition of the asbestos abatement construction permit if the building is occupied at any time during the asbestos abatement project, and must be provided 20 business days prior to commencement of the project. REHS writes the building occupant notification to the building coordinator or other designated individual(s), and provides copies to the asbestos safety control monitor (ASCM), the Rowan Project Manager, and the Facilities Maintenance Department director. EHS provides a copy of the building occupant notification to the asbestos safety control monitor for the asbestos abatement construction permit; however, the Project Manager assumes the primary responsibility for building occupant notification. Although not required, EHS typically provides similar notification for asbestos abatement projects in unoccupied buildings.

For all Asbestos Hazard Abatement Projects, a licensed Asbestos Safety Control Monitor (ASCM) provides oversight of the asbestos abatement contractor to ensure compliance with state and federal regulations, as well as additional Rowan University requirements. Some responsibilities of the ASCM include:

- Reviewing plans and specifications for asbestos abatement projects,
- Providing technical assistance and performing inspections and air monitoring during asbestos abatement projects, and
- Providing a final written report

The following table summarizes key state and federal regulatory requirements for friable asbestos abatement projects:
Asbestos Abatement Project Requirements for Friable Materials (Ceiling plaster, fireproofing, pipe insulation, ceiling tile) Requirements

<table>
<thead>
<tr>
<th>Building Occupant Notification</th>
<th>No</th>
<th>No</th>
<th>Yes&lt;sup&gt;1&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory Agency Notification</td>
<td>No</td>
<td>No</td>
<td>Yes&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>Asbestos Abatement Permit</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Air Monitoring</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Notes:

- Rowan University notifies building occupants for all asbestos abatement work as described in this document; however, building occupant notification is only a regulatory requirement for asbestos hazard abatement projects. For buildings occupied during the asbestos abatement project, occupants must be provided written notification 20 business days before the start of the project; this written notification must be posted on building entrances 7 calendar days before the start of the project.
- The asbestos abatement contractor must notify the N. J. Department of Labor 10 calendar days prior to the start of the asbestos abatement project.
- The asbestos abatement contractor is responsible for notifying the N. J. Department of Labor and Department of Community Affairs; if the project exceeds 160 square feet or 260 linear feet, the asbestos safety control monitor notifies the U. S. EPA.
- EHS may require air monitoring for some projects based upon the nature of the removal work, building occupancy, and other factors; this requirement will be determined before the removal project.

**Non-friable Asbestos Containing Material Removal**

Non-friable asbestos containing materials are building materials which when dry, may not be crumbled, pulverized, or reduced to powder by hand pressure; examples include floor tile, Transite wallboard, asbestos cement siding, and roofing materials. If interior non-friable asbestos containing materials are removed in a manner that does not generate airborne asbestos (i.e., the materials are removed intact), this work does not require an asbestos abatement construction permit under subchapter 8. Requirements include general isolation of the work area, implementation of safe work practices (as defined in 29 CFR 1926.1101), and proper clean-up and disposal of asbestos and waste in accordance with the N. J. Department of Environmental Protection requirements. However, if non-friable asbestos containing materials are removed in a manner which is capable of generating airborne asbestos (i.e., grinding and mechanical tasks which break these materials), then these projects must follow all subchapter 8 requirements, including building occupant notification.

Removal of exterior non-friable asbestos containing materials, such as asbestos cement siding and roofing materials, are not covered by Subchapter 8. For this type of removal work, requirements include implementation of safe work practices (as defined in 29 CFR 1926.1101) which minimize employee exposure during removal activities, and proper waste disposal in accordance with N. J. Department of Environmental Protection and Environmental Protection Agency 40 CFR Part 61, Subpart M. Licensed asbestos abatement contractors performing interior non-friable asbestos removal work greater than 3 square or linear feet, or exterior asbestos removal work performed as part of a demolition project, must notify the N. J. Department of Labor 10 days prior to project commencement.

The following table summarizes key state and federal regulatory requirements for non-friable asbestos abatement projects:
Asbestos Abatement Project Requirements for Non-Friable Materials (Lab benches, Transite, intact floor tiles) Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>&lt; 3 Linear Feet OR &lt; 3 Square Feet of Asbestos</th>
<th>&gt; 3 Square Feet BUT &lt;160 Square Feet of Asbestos</th>
<th>&gt; 160 Square Feet of Asbestos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Occupant Notification</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Regulatory Agency Notification</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Asbestos Abatement Permit</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Air Monitoring</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Notes:

- Rowan University notifies building occupants for all asbestos abatement work as described in this document; however, building occupant notification is not a regulatory requirement for non-friable asbestos removal projects.
- Asbestos abatement work that does not break or otherwise damage non-friable asbestos containing materials does not require a permit; however, if the removal method does break and/or damage non-friable materials, then the requirement for friable materials apply.

X. Scheduling and Completing Asbestos Abatement Projects at Rowan

Rowan University employees are prohibited from removing asbestos containing materials and from performing work activities that damage and/or disturb these materials. EHS schedules, coordinates, and completes asbestos removal projects for departments requesting this work in the following manner:

- The supervisor, project manager, or planner/estimator contacts the EHS Health and Safety Specialist to request asbestos survey information for the building materials impacted by the proposed work activities. EHS provides this information and arranges to collect additional samples as necessary. The maintenance supervisor, planner/estimator, or project manager must clearly define the scope of work.
- Once the Health and Safety Specialist provides asbestos survey information, the supervisor, project manager, or planner/estimator contacts the EHS Asbestos Abatement Manager to obtain cost estimates and to schedule the asbestos abatement work.
- Facilities Maintenance coordinates with and notifies the building occupants of asbestos abatement work necessary for the project or work activities. For large renovation projects, the project manager notifies Facilities Maintenance and the building occupants of the asbestos abatement work.

XI. Post-Abatement Clearance and Notification

Once the asbestos abatement contractor completes their work, the asbestos safety control monitor conducts a thorough visual inspection within the work area(s) and conducts air monitoring required by subchapter 8.

Upon successful completion of an asbestos hazard abatement project, EHS performs post asbestos abatement project notification in the following manner:

- The building coordinator receives a memo indicating the asbestos removal project has been successfully completed along with any clearance air monitoring results. A copy of this memo is sent to the project manager and Facilities Maintenance Director.