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Contents: AsbestosEffective Date: **May 2002**Point of Contact: [Asbestos Subject Matter Expert](#)

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| 1. Identifying the Presence of Asbestos | <ul style="list-style-type: none"> • Prepare work planning and control documentation for sampling method. • Sample and analyze material. • Send results to SHSD and MMC for inclusion in Key Plans, if required. |
| 2. Classifying Work with Asbestos | <ul style="list-style-type: none"> • Determine OSHA Class of work. • Prepare work planning and control documentation. |
| 3. Class I & II Removal and Disturbance of Asbestos in Building Materials by BNL Staff | <ul style="list-style-type: none"> • Prepare work planning and control documentation. • Complete and submit notifications. • Perform monitoring and medical surveillance, if required. • Dispose of asbestos. |
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| 6. Laboratory-scale Use of Asbestos | <ul style="list-style-type: none"> • Prepare departmental written documentation. • Obtain training. • Dispose of asbestos. |
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- Conduct operations.
- Dispose of asbestos.

[8. Disposal of Asbestos](#)

- Prepare work planning and control documentation.
- Label and dispose of asbestos waste.
- Transport asbestos waste.
- Complete Asbestos Waste Disposal Form.

[Definitions](#)

Exhibits

[Brake and Clutch Removal Requirements](#)

[Classification of Asbestos Work](#)

[Construction Industry Requirements](#)

[EPA Notification Requirements](#)

[General Industry Requirements](#)

[Warning Label and Sign Content](#)

Forms

[Asbestos Waste Disposal Form](#)

[Notification of Demolition and Renovation Form](#)

Training Requirements and Reporting Obligations

This subject area contains training requirements. See the [Training and Qualifications](#) Web Site.

This subject area contains the following reporting obligations:

- Submit Notification of Demolition and Renovation Form to the EPA. See the sections [Class I & II Removal and Disturbance of Asbestos in Building Materials by BNL Staff](#) and [Class I & II Removal and Disturbance of Asbestos in Building Materials by Contractors](#).

References

40CFR61.145, National Emission Standard for Hazardous Air Pollutants

[ES&H Standard 1.3.5, Planning and Control of Experiments](#)

[ES&H Standard 1.3.6, Work Planning and Control for Operations](#)

[Training and Qualifications](#) Web Site

Standards of Performance

All staff and guests shall comply with applicable Laboratory policies, standards, and procedures, unless a formal variance is obtained.

Managers shall analyze work for hazards, authorize work to proceed, and ensure that work is performed within established controls.

established controls.

All staff and users shall identify, evaluate, and control hazards in order to ensure that work is conducted safely and in a manner that protects the worker, the environment and the public.

All staff and users shall ensure that they are trained and qualified to carry out their assigned responsibilities, and shall inform their supervisor if they are assigned to perform work for which they are not properly trained or qualified.

Management System

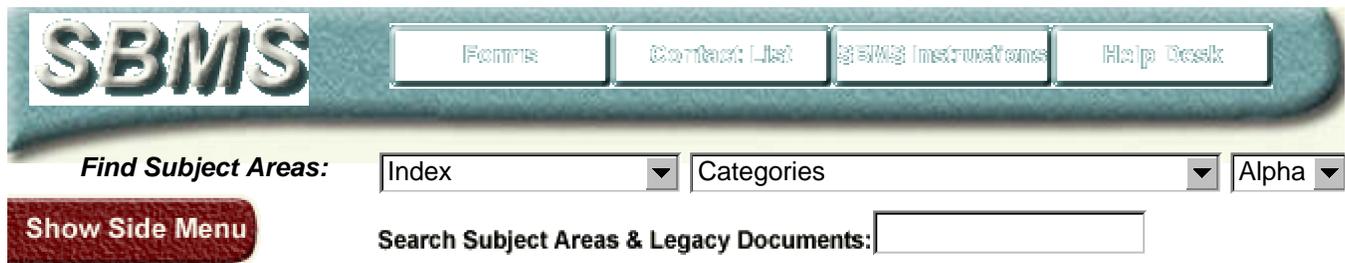
This subject area belongs to the **Worker Safety and Health** management system.

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Introduction: AsbestosEffective Date: **May 2002**Point of Contact: [Asbestos Subject Matter Expert](#)

This subject area provides procedures for ensuring the safest handling of the types of asbestos encountered at Brookhaven National Laboratory (BNL) by describing restrictions and permitted operations.

Asbestos may be present in many buildings at BNL, primarily in pipe insulation, ceiling tiles, gaskets, thermal insulation, cement boards and pipes, flooring material, and in roofing products. It may also exist in brake and clutch linings. It may also be found in some laboratory equipment (such as insulation on gloves, ring stand clamps, and heating mantles), fire blankets, and some older electrical wiring insulation.

Asbestos sampling and removal are highly regulated by government agencies such as the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA). Conducting any operation that disturbs or removes asbestos requires written exposure control procedures based on this subject area and approved by the [Asbestos Subject Matter Expert](#).

This subject area provides information on how to identify, sample, remove, dispose of, and work with asbestos-containing materials. This information ensures compliance with OSHA while protecting workers and building occupants. This subject area also provides information for the types of documentation that are involved in asbestos work. Asbestos workers must receive training that complies with the OSHA and EPA model training program curriculum.

Under certain conditions, usually associated with heavy occupational exposures over prolonged periods, asbestos can lead to diseases such as asbestosis, mesothelioma, and lung cancer. Based on both animal and human studies, asbestos is classified as a Class I carcinogen (known to be human carcinogens) by the International Agency for Research on Cancer (IARC). The nature of the risks of asbestos exposure vary according to the duration and intensity of exposure, the type of fiber, and other critical factors. By controlling airborne fiber release and exposure to workers and building occupants, the risk of these asbestos diseases can be greatly reduced.

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Subject Area: **Asbestos**

1. Identifying the Presence of Asbestos

Effective Date: **May 2002**

Point of Contact: [Asbestos Subject Matter Expert](#)

Applicability

This information applies to BNL staff and non-BNL staff who need to know if asbestos is present in a work area.

Required Procedure

| | |
|---------------|---|
| Step 1 | BNL staff contacts an ESH Coordinator , Facility Support Representative , or the Plant Engineering Asbestos Abatement to arrange for an Asbestos Sampler to identify the suspect material. |
| Step 2 | An Asbestos Competent Person prepares work planning and control documentation, such as a standard operating procedure (SOP), describing the method to use to sample the material. The documentation must address all of the components listed in the Construction Industry Requirements exhibit (for example, removal technique, controls, Personal Protective Equipment (PPE), and a Chain of Custody procedure for the samples). |
| Step 3 | An Asbestos Competent Person must have the written documentation approved by the Asbestos Subject Matter Expert before sampling begins. |
| Step 4 | The Asbestos Sampler follows the written documentation in taking samples, using the approved removal technique, controls, PPE, and sample tracking by a formal Chain of Custody procedure. |
| Step 5 | The Asbestos Sampler sends the samples to an American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing Program certified laboratory for analysis by the National Institute of Safety and Health (NIOSH), EPA, or New York State Department of Health (DOH) methods. Acceptable analysis methodology includes the following: <ul style="list-style-type: none"> • Airborne asbestos fiber counts: Phase Contrast Microscopy (PCM) using NIOSH 7400; • Friable bulk asbestos: Polarized Light Microscopy (PLM) using EPA600/R93/116, NYS 198.1; • Friable bulk asbestos: EPA Point Count-400 points (for friable less than 10% on EPA600 test); • Nonorganically Bound (NOB), nonfriable bulk: New York State Transmission Electron Microscopy (TEM 198.4). |
| Step 6 | The Asbestos Sampler sends a copy of the results to the Safety & Health Services Division (SHSD) Industrial Hygiene Group for long-term record retention. |

| | |
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| Step 7 | If the sample is taken for building materials that will remain in place, the Asbestos Sampler sends the results and a full description of the sample location to Plant Engineering Maintenance Management (MMC) for inclusion in the building Key Plans, as applicable. |
| Step 8 | <p>If the sample is taken for building materials that will be removed in a renovation or demolition project, the Asbestos Competent Person must ensure that the presence and location of ACM is noted in the Work Planning and Control documentation for the construction activity.</p> <p>The Asbestos Competent Person notifies the Plant Engineering Asbestos Abatement Engineer of all information needed for EPA notification at least 15 working days before the start of asbestos project.</p> |

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Subject Area: **Asbestos**

2. Classifying Work with Asbestos

Effective Date: **May 2002**

Point of Contact: [Asbestos Subject Matter Expert](#)

Applicability

This information applies to BNL staff and non-BNL staff who plan or classify work with asbestos-containing material.

Required Procedure

This section covers construction, renovation, and demolition operations that encounter or disturb asbestos in building materials, such as floor tiles, ceiling tiles, pipe insulation, sprayed-on insulation, duct insulation, pipe gaskets, asbestos-concrete pipes, and sheets.

| | |
|---------------|--|
| Step 1 | The Asbestos Competent Person determines the Occupational Safety and Health Administration (OSHA) Class of the work to be done based on the Classification of Asbestos Work exhibit. |
| Step 2 | The Asbestos Competent Person follows the provisions set forth in either the Classification of Asbestos Work , Construction Industry Requirements , or General Industry Requirements exhibits and creates or approves the work planning and control documentation. Note: Refer to ES&H Standard 1.3.6, Work Planning and Control for Operations for more information on work planning and control documentation. |

References

[ES&H Standard 1.3.6, Work Planning and Control for Operations](#)

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3. Class I & II Removal and Disturbance of Asbestos in Building Materials by BNL Staff

Effective Date: **May 2002**

Point of Contact: [Asbestos Subject Matter Expert](#)

Applicability

This information applies to BNL staff who handle, use, or disturb asbestos-containing material.

Required Procedure

This section covers construction, renovation, and demolition operations that encounter or disturb asbestos in building materials, such as floor tiles, ceiling tiles, pipe insulation, sprayed-on insulation, duct insulation, pipe gaskets, asbestos-concrete pipes, and sheets.

The planned activity is classified (from Class I & II) in accordance with the OSHA Construction Standard Classification System described in the [Construction Industry Requirements](#) exhibit. Refer to the [Classifying Work with Asbestos](#) section for more information.

| | |
|---------------|--|
| Step 1 | <p>An Asbestos Competent Person prepares work planning and control documentation, such as a standard operating procedure (SOP), that addresses all the components listed in the Construction Industry Requirements exhibit and ensures that the documentation is approved by the Asbestos Subject Matter Expert.</p> <p>Note: All SOPs must be in accordance with ES&H Standard 1.3.6, Work Planning and Control for Operations.</p> |
| Step 2 | <p>The Asbestos Competent Person notifies the Plant Engineering Asbestos Abatement Engineer of all information needed for EPA notification at least 15 working days before the start of asbestos project. The Plant Engineering Asbestos Abatement Engineer submits a completed Notification of Demolition and Renovation Form to the EPA at least 10 days before the start of work and sends a copy to the Asbestos Subject Matter Expert, when the quantity of regulated asbestos-containing material (RACM) to be disturbed</p> <ul style="list-style-type: none"> • Exceeds 260 linear feet, 160 square feet, or 35 cubic feet of the work; or • The project involves any demolition of a building (regardless of the asbestos content). <p>Departments/Divisions that disturb RACM in buildings in quantities per job that do not require EPA reporting (i.e., less than 260 linear feet, 160 square feet, or 35 cubic feet) of the projects must maintain records of the quantity of asbestos-containing material (ACM) involved. Report the total ACM removed from November 30th of the preceding year through December 1st of the current year to the Plant Engineering Asbestos Abatement Engineer by December 10th of each year.</p> |

| | |
|---------------|---|
| Step 3 | The employees' supervisor ensures that all asbestos workers are trained in an EPA Model Program equivalent training course that is appropriate for the OSHA Class I and II work. For more information, see the Target Audience Descriptions for Required Training, Training and Qualifications Web site. |
| Step 4 | The project's Asbestos Competent Person contacts the Asbestos Subject Matter Expert, who determines and approves the personnel exposure monitoring requirements. |
| Step 5 | The Asbestos Competent Person contacts an Asbestos Sampler to perform the employee exposure monitoring and, if required, area monitoring and clearance monitoring. The Asbestos Competent Person evaluates clearance monitoring results and prepares written documentation on the return of the area to "general public occupancy" status. |
| Step 6 | <p>The Occupational Medicine Clinic (OMC) may need to perform medical surveillance of BNL asbestos workers, depending on the level and duration of exposure. The Department/Division must notify the OMC if any of the following conditions exists or are reasonably anticipated:</p> <ul style="list-style-type: none"> • Negative-pressure respirators will be worn in the presence of an asbestos-containing material (ACM); • Exposure to asbestos may be at or above the permissible exposure limit; • Class I, II, or III work will be conducted for a combined total of 30 or more days per year. <p>Medical surveillance evaluations are provided at least annually thereafter on asbestos workers that remain in these conditions.</p> <p>Note: Departments/Divisions may develop an alternative asbestos worker notification protocol that meets the intent of the OSHA requirements and is approved by the Asbestos Subject Matter Expert.</p> |
| Step 7 | Asbestos workers handle asbestos in accordance with the written documentation and dispose of it according to the section on Disposal of Asbestos . |

References

[Target Audience Descriptions for Required Training, Training and Qualifications](#) Web site
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4. Class I & II Removal and Disturbance of Asbestos in Building Materials by Contractors

Effective Date: **May 2002**

Point of Contact: [Asbestos Subject Matter Expert](#)

Applicability

This information applies to contractors who handle, use, or disturb asbestos.

Required Procedure

This sections covers construction, renovation, and demolition operations that encounter or disturb asbestos in building materials, such as floor tiles, ceiling tiles, pipe insulation, sprayed-on insulation, duct insulation, pipe gaskets, asbestos-concrete pipes, and sheets.

The planned activity is classified (from Class I & II) in accordance with the OSHA Construction Standard Classification System described in the [Construction Industry Requirements](#) exhibit. Refer to the [Classifying Work with Asbestos](#) section for more information.

| | |
|---------------|---|
| Step 1 | <p>An Asbestos Project Designer working for the BNL organization contracting the work notifies bidding subcontractors of the presence of asbestos in building materials involved in a project.</p> <p>The Asbestos Project Designer prepares specifications for the asbestos-containing material (ACM) to be disturbed. The Bidding and Contract Requirements document must be reviewed by the Asbestos Subject Matter Expert and the Plant Engineering Asbestos Abatement Engineer for any work involving asbestos-containing material.</p> |
| Step 2 | <p>BNL's Contracting Organization ensures the</p> <ul style="list-style-type: none"> • Planned activity is classified in accordance with the Construction Industry Requirements exhibit. For more information on classifying asbestos work, see the section Classifying Work with Asbestos. • Asbestos contractor prepares a written procedure, such as a standard operating procedure (SOP) or a health and safety plan (HSP), that addresses all components listed in the Construction Industry Requirements exhibit. |
| Step 3 | <p>The Asbestos Competent Person notifies the Plant Engineering Asbestos Abatement Engineer of all information needed for EPA notification at least 15 working days before the start of asbestos project. The Plant Engineering Asbestos Abatement Engineer submits a Notification of Demolition and Renovation Form to the EPA at least 10 days before the start of work and sends a copy to the Asbestos Subject Matter Expert, when the quantity of regulated asbestos-containing material (RACM) to be disturbed</p> |

| | |
|----------------|--|
| | <ul style="list-style-type: none"> • Exceeds 260 linear feet, 160 square feet, or 35 cubic feet of the work; or • The project involves any demolition of a building (regardless of the asbestos content). <p>Departments/Divisions that disturb regulated asbestos-RACM in buildings in quantities per job that do not require EPA reporting (i.e., less than 260 linear feet, 160 square feet, or 35 cubic feet) of the projects must maintain records of the quantity of asbestos-containing material (ACM) involved. Report the total ACM removed from November 30th of the preceding year through December 1st of the current year to the Plant Engineering Asbestos Abatement Engineer by December 10th of each year.</p> |
| Step 4 | The BNL Contracting Organization ensures that the asbestos contractor holds a valid New York State Asbestos Contractor License. A copy of the license must be posted at the job site. |
| Step 5 | The Asbestos Contractor ensures that all asbestos workers on the site hold a valid New York State Asbestos Worker/Handler Certificate. A copy of all certificates must be at the job site. |
| Step 6 | The Asbestos Contractor arranges for personnel exposure sampling. Copies of the results must be supplied to the BNL Contracting Organization and the Asbestos Subject Matter Expert. |
| Step 7 | The Asbestos Project Designer oversees the operation to ensure that the Asbestos Contractor conducts asbestos operations following the precautions and controls stated in the SOP or HSP. |
| Step 8 | Asbestos workers handle asbestos and use personal protective equipment in accordance with the SOP or HSP. |
| Step 9 | The Asbestos Contractor arranges for OSHA- and EPA-compliant air sampling to collect clearance samples as required by the EPA. |
| Step 10 | Asbestos workers dispose of asbestos waste according to the section on Disposal of Asbestos . |

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5. Class III & IV Building Operation & Maintenance (O&M) for Activities Involving Asbestos Building Materials

Effective Date: **May 2002**

Point of Contact: [Asbestos Subject Matter Expert](#)

Applicability

This information applies to BNL staff and non-BNL staff who handle, use, or disturb asbestos.

Required Procedure

This section covers routine maintenance of materials (such as floor cleaning, ceiling tile relocation to access utility spaces, and maintenance near asbestos-containing building materials) that do not involve construction-level operations on asbestos-containing material. This may include contact with asbestos-containing wiring.

BNL does not require the removal of existing, undamaged asbestos-containing material. Regulated asbestos-containing material (RACM) must be managed in a surveillance program that is approved by the [Asbestos Subject Matter Expert](#).

| | |
|---------------|--|
| Step 1 | An Asbestos Competent Person determines if the activity is covered by an existing, documented "Negative Exposure Assessment (NEA)" approved by the Asbestos Subject Matter Expert . If the activity falls with the scope of the NEA, the work may proceed with no further requirements. |
| Step 2 | An Asbestos Competent Person or Asbestos Project Designer determines if the work is covered by existing written work planning and control documentation, such as a standard operating procedure (SOP). If the activity is not covered by existing documentation, contact the Asbestos Subject Matter Expert for assistance in developing documentation. Include in the written documentation information on <ul style="list-style-type: none"> Potential for airborne exposure to workers and building occupants during the operation; Prohibited practices; Labeling and warning signs of building maintenance personnel; and Training level for workers. |
| Step 3 | If the work planning and control documentation requires exposure monitoring, the supervisor or project's Asbestos Competent Person contacts an Asbestos Sampler to perform the employee exposure and area monitoring. |
| Step 4 | The Occupational Medicine Clinic (OMC) may need to perform medical surveillance of BNL asbestos workers depending on the level and duration of exposure. The Department/Division must notify the OMC if any of the following conditions exists or are reasonably anticipated: |

| | |
|---------------|---|
| | <ul style="list-style-type: none"> • Negative-pressure respirators will be worn in the presence of an asbestos-containing material (ACM); • Exposure to asbestos may be at or above the permissible exposure limit; • Class III work will be conducted for a combined total of 30 or more days per year. <p>Medical surveillance evaluations are provided at least annually thereafter on asbestos workers that remain in these conditions.</p> <p>Note: Departments/Divisions may develop an alternative asbestos worker notification protocol that meets the intent of the OSHA requirements and is approved by the Asbestos Subject Matter Expert.</p> |
| Step 5 | <p>The project's Asbestos Competent Person ensures that asbestos workers are trained in an EPA Model Program equivalent training course for OSHA Class III activities. For more information, see the Target Audience Descriptions for Required Training, Training and Qualifications Web Site.</p> |
| Step 6 | <p>All workers conduct asbestos operations by following the precautions and controls stated in the work planning and control documentation.</p> |

References

[Target Audience Descriptions for Required Training, Training and Qualifications](#) Web Site

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6. Laboratory-scale Use of Asbestos

Effective Date: **May 2002**

Point of Contact: [Asbestos Subject Matter Expert](#)

Applicability

This information applies to BNL staff and non-BNL staff who handle or use asbestos in a laboratory-scale setting.

Required Procedure

| | |
|---------------|--|
| Step 1 | The Principle Investigator prepares departmental written documentation on the asbestos operation. Refer to ES&H Standard 1.3.5, Planning and Control of Experiments for information on documentation. |
| Step 2 | The Principal Investigator ensures that the documentation is approved by the Department/Division Environment, Safety & Health (ES&H) Coordinator and the Asbestos Subject Matter Expert . |
| Step 3 | Supervisors and workers contact their Department/Division Training Coordinator to arrange for training before working with asbestos. For more information, see the Target Audience Descriptions for Required Training, Training and Qualifications Web Site. |
| Step 4 | Workers dispose of asbestos waste according to the section on the Disposal of Asbestos . |

Guidelines

Staff should consider the following when working with asbestos:

- Engineering controls, such as laboratory hoods or glove boxes, provide a high level of exposure control. Contact the appropriate [Subject Matter Expert](#) for information on available control devices.
- Contact an [ESH Coordinator](#) to arrange for the removal or replacement of soft asbestos from small laboratory equipment, such as tubing clamps, ring stands, oven mitts, and fire blankets. Properly dispose of asbestos material by following the section on [Disposal of Asbestos](#)
- Monitor the condition of transite in laboratory equipment, such as laboratory ovens and hoods, and arrange for the repair of damage by trained personnel.
- Use wet techniques for wiping surfaces to minimize the potential for airborne release of fibers.

References

[ES&H Standard 1.3.5, Planning and Control of Experiments](#)

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7. Vehicle Maintenance Involving Asbestos

Effective Date: **May 2002**

Point of Contact: [Asbestos Subject Matter Expert](#)

Applicability

This information applies to staff who disturb asbestos-containing material or debris while maintaining vehicles.

Required Procedure

This section describes procedures for maintaining vehicles that have asbestos-containing parts, such as brakes, clutch linings, or gaskets.

| | |
|---------------|---|
| Step 1 | <p>The BNL Organization performing work prepares written work planning and control documentation on removal and handling of asbestos parts. This documentation must be in accordance with the Brake and Clutch Removal Requirements exhibit. The following activities require a written procedure describing the control method to be used when</p> <ul style="list-style-type: none"> • Disturbing asbestos-containing brake and clutch linings on motor vehicles and machinery; or • Machining, grinding, turning, cutting, sanding, buffing, polishing with abrasives, filing, drilling, tapping, or any other modification of the physical shape of an asbestos-containing surface or part. <p>Note: Refer to the ES&H Standard 1.3.6, Work Planning and Control for Operations for more information on work planning and control documentation.</p> |
| Step 2 | <p>The BNL Organization performing work ensures that the work control documentation is approved by the Asbestos Subject Matter Expert.</p> |
| Step 3 | <p>Supervisors contact their Department/Division Training Coordinator to arrange for Asbestos awareness level training for workers. For more information, see the Target Audience Descriptions for Required Training, Training and Qualifications Web Site.</p> |
| Step 4 | <p>If the written work control documentation requires exposure monitoring, the supervisor contacts their ESH Coordinator or Facility Support Representative who will arrange for employee exposure and area monitoring.</p> |
| Step 5 | <p>The Occupational Medicine Clinic (OMC) may need to perform medical surveillance of BNL workers depending on the level and duration of exposure. The Department/Division must notify the OMC if any of the following conditions exists or are reasonably anticipated:</p> |

| | |
|---------------|--|
| | <ul style="list-style-type: none"> Negative-pressure respirators will be worn in the presence of an asbestos-containing material (ACM); Exposure to asbestos may be at or above the permissible exposure limit. <p>Medical surveillance evaluations are provided at least annually thereafter on workers that remain in these conditions.</p> <p>Note: Departments/Divisions may develop an alternative asbestos worker notification protocol that meets the intent of the OSHA requirements and is approved by the Asbestos Subject Matter Expert.</p> |
| Step 6 | Workers conduct asbestos operations following the precautions and controls stated in the work planning and control documentation. |
| Step 7 | Workers dispose of asbestos waste according to the section on the Disposal of Asbestos . |

Guidelines

Staff should consider the following when working with asbestos containing material:

- Engineering controls, such as High-Efficiency Particulate Air (HEPA) filtered brake drum enclosures, provide a high level of exposure control. Contact the appropriate [Subject Matter Expert](#) for information on available control devices.
- Use wet techniques for wiping surfaces, such as the inside of brake drums, to minimize the potential for airborne release of fibers.

References

[ES&H Standard 1.3.6, Work Planning and Control for Operations](#)

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8. Disposal of Asbestos

Effective Date: **May 2002**

Point of Contact: [Asbestos Subject Matter Expert](#)

Applicability

This information applies to BNL staff and non-BNL staff who dispose of asbestos-containing material.

Required Procedure

| | |
|---------------|---|
| Step 1 | An Asbestos Project Designer prepares disposal requirements for the written work planning and control documentation, such as a standard operating procedure (SOP), which addresses all the components listed in the Construction Industry Requirements exhibit. |
| Step 2 | Supervisors ensure that all asbestos workers are familiar with disposal requirements and are trained in an EPA Model Program equivalent training course that is appropriate for OSHA Class IV activities. For more information, see the Target Audience Descriptions for Required Training, Training and Qualifications Web Site. |
| Step 3 | Asbestos workers use personal protective equipment (PPE) according to the work planning and control documentation. |
| Step 4 | Asbestos workers discard contaminated disposable PPE, such as Tyvek or Clean-Guard suits, as asbestos waste. Label contaminated clothing containers with the wording listed in the Warning Label and Sign Content exhibit. Asbestos workers process contaminated reusable clothing containers according to the Warning Label and Sign Content exhibit and ship to a laundry equipped to handle asbestos-contaminated clothing. |
| Step 5 | Asbestos workers dispose of asbestos waste in sealed, impermeable, double bags (6-mil, plastic) or 6-mil, plastic-double lined containers labeled with the following wording: DANGER - CONTAINS ASBESTOS FIBERS - AVOID CREATING DUST - CANCER AND LUNG DISEASE HAZARD. Include the name of the waste generator (Brookhaven National Laboratory - BNL) and the location at which the waste was generated. |
| Step 6 | BNL asbestos workers transport bagged asbestos waste from the work area site to the Asbestos Disposal Container located at the BNL Transport Facility, and deposit it in a covered 6-mil, plastic double-lined Asbestos Disposal Container. While loading asbestos waste, the label the container with the following wording: DANGER - CONTAINS ASBESTOS FIBERS - AVOID CREATING DUST - CANCER AND LUNG DISEASE HAZARD - Authorized Personnel Only. |

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| | <p>Workers wear PPE as specified in the work planning and control documentation while transferring asbestos waste.</p> <p>Outside asbestos contractors must provide and locate an approved Asbestos Disposal Container at each job site.</p> <p>The Hazardous Waste Facility handles and disposes of all radiologically contaminated asbestos waste.</p> |
| Step 7 | <p>An Asbestos Competent Person completes the Asbestos Waste Disposal Form for all deposits at the BNL Transport Facility and sends it to the Plant Engineering Asbestos Abatement Engineer for recordkeeping and reporting.</p> <p>Note: The Plant Engineering Asbestos Abatement Engineer or outside asbestos contractor contacts a New York State Department of Environmental Conservation approved transporter to transport the Asbestos Disposal Container to a regulated off-site facility for the disposal. The Plant Engineering Asbestos Abatement Engineer retains the completed Asbestos Waste Manifest Form that must be received from the transporter within 35 days of the date the waste was accepted by the transporter.</p> <p>Note: All asbestos waste must pass through the vehicle radiation monitor before leaving the BNL property.</p> |

References

[Target Audience Descriptions for Required Training, Training and Qualifications](#) Web Site

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Brake and Clutch Removal Requirements

The following provisions must be addressed in Department/Division written procedures for automotive brake and clutch inspection, disassembly, repair and assembly operations. Engineering controls and work practices to reduce employee exposure to materials containing asbestos must use one of the following methods:

| Brake and Clutch Removal Engineering Controls and Work Practices | |
|---|---|
| Negative Pressure Enclosure/HEPA Vacuum System Method | <ul style="list-style-type: none"> • The brake and clutch inspection, disassembly, repair, and assembly operations are enclosed to cover and contain the clutch or brake assembly and to prevent the release of asbestos fibers into the worker's breathing zone. • The enclosure seals tightly and is thoroughly inspected for leaks before work begins on brake and clutch inspection, disassembly, repair, and assembly. • The enclosure allows the worker to clearly see the operation and provides impermeable sleeves through which the worker can handle the brake and clutch inspection, disassembly, repair and assembly. The integrity of the sleeves and ports are examined before work begins. • A HEPA-filtered vacuum is used to maintain the enclosure under negative pressure throughout the operation. Compressed-air may be used to remove asbestos fibers or particles when used inside a HEPA Vacuum system enclosure. • The HEPA vacuum is used first to loosen the asbestos-containing residue from the brake and clutch parts and then to evacuate the loosened asbestos containing material from the enclosure and capture the material in the vacuum filter. • The vacuum's filter, when full, is first wetted with a fine mist of water, then removed and placed immediately in an impermeable container, labeled according to Exhibit Warning Label and Sign Content and is disposed of according to WMD guidance. • Any spills or releases of asbestos containing waste material from inside of the enclosure or vacuum hose or vacuum filter are immediately cleaned up and disposed. |
| Low Pressure/Wet Cleaning Method | <ul style="list-style-type: none"> • A catch basin be placed under the brake assembly, positioned to avoid splashes and spills. • The reservoir contains water containing an organic solvent or wetting agent. The flow of liquid be controlled such that the brake assembly is gently flooded to prevent the asbestos-containing brake dust from becoming airborne. • The aqueous solution be allowed to flow between the brake drum and brake support before the drum is removed. • After removing the brake drum, the wheel hub and back of the brake assembly be thoroughly wetted to suppress dust. • The brake support plate, brake shoes and brake components used to attach the brake shoes be thoroughly washed before removing the old shoes. • In systems using filters, the filters, when full, be first wetted with a fine mist of water, then removed and placed immediately in an impermeable container, labeled according to Exhibit Warning Label and Sign Content and is disposed of according to WMD guidance. • Any spills of asbestos-containing aqueous solution or any asbestos-containing waste material be cleaned up immediately and disposed of according to WMD guidance. • The use of dry brushing during low pressure/wet cleaning operations is prohibited. |

| Brake and Clutch Removal Engineering Controls and Work Practices | |
|--|--|
| Equivalent Method | An equivalent method that has sufficient written detail so that it can be reproduced and has been demonstrated that the exposures resulting from the equivalent method are equal to or less than the exposures which would result from the use of the method described in Negative Pressure Enclosure/HEPA Vacuum System Method (i.e., not exceed 0.016 f/cc, as measured by the OSHA reference method and as averaged over at least 18 personal samples.) |
| When no more than 5 pair of brakes or 5 clutches are inspected, disassembled, repaired, or assembled per week | <ul style="list-style-type: none"> • A spray bottle, hose nozzle, or other implement capable of delivering a fine mist of water or amended water or other delivery system capable of delivering water at low pressure, is used to first thoroughly wet the brake and clutch parts. Brake and clutch components are then wiped clean with a cloth. • The cloth is placed in an impermeable container, labeled according to Exhibit Warning Label and Sign Content and then disposed of according to directions from WMD or the cloth is laundered in a way approved by the Asbestos Subject Matter Expert to prevent the release of asbestos fibers. • Any spills of solvent or any asbestos containing waste material are cleaned up immediately. • Dry brushing during the wet method operations is prohibited. |
| Exposure Monitoring | <p>Perform initial monitoring of employees who are, or may reasonably be expected to be exposed to airborne concentrations at or above the TWA permissible exposure limit and/or excursion limit. (Where there is objective data that demonstrates that asbestos is not capable of being released in airborne concentrations at or above the TWA permissible exposure limit and/or excursion limit under the expected conditions of processing, use, or handling, no initial monitoring is required.)</p> <p>Perform periodic monitoring at no more than six months interval for employees whose exposures may reasonably be foreseen to exceed the TWA permissible exposure limit and/or excursion limit.</p> |
| Regulated Area | <p>Establish regulated areas wherever airborne concentrations of asbestos and/or PACM are in excess of the TWA and/or excursion limit.</p> <p>Demarcate from the rest of the workplace in any manner that minimizes the number of persons who will be exposed to asbestos.</p> <p>Limit access to authorized persons and supply and require use of appropriate respirators. Prohibit employees to eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the regulated areas.</p> |
| Protective work clothing and equipment | <p>Employee exposed to asbestos above the TWA and/or excursion limit, or where the possibility of eye irritation exists, provide and ensure the use of:</p> <p>Coveralls or similar full-body work clothing;</p> <p>Gloves, head coverings, and foot coverings; and</p> <p>Face shields, vented goggles, or other appropriate protective equipment</p> |
| Hygiene facilities and practices | <p>Provide clean change rooms, showers, and lunchroom for employees who work in areas where their airborne exposure to asbestos is above the TWA and/or excursion limit.</p> |
| Employee information | <p>Employees who repair and replace automotive brakes and clutches may be exposed to asbestos fibers:</p> <p>Post Warning signs at each regulated area.</p> <p>Affix Warning labels to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers.</p> |

| Brake and Clutch Removal Engineering Controls and Work Practices | |
|---|--|
| Housekeeping | <p>Maintain surfaces as free as practicable of ACM waste and debris and accompanying dust.</p> <p>Clean up all spills and sudden releases of material containing asbestos as soon as possible.</p> <p>Do not clean surfaces contaminated with asbestos by the use of compressed air.</p> <p>Use HEPA-filtered vacuum equipment for vacuuming asbestos containing waste and debris. Minimizes the reentry of asbestos into the workplace.</p> <p>Shovel dry sweep and dry clean-up of asbestos only where vacuuming and/or wet cleaning are not feasible.</p> |
| Medical Surveillance | <p>Institute a medical surveillance program for all employees who are or will be exposed to airborne concentrations of fibers of asbestos at or above the TWA and/or excursion limit. Periodic medical examinations be made available annually.</p> |

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Subject Area: **Asbestos**

Classification of Asbestos Work

Effective Date: **May 2002**

Point of Contact: [Asbestos Subject Matter Expert](#)

| | |
|---------------------------------------|--|
| A. Construction Activities | |
| Class I Asbestos Work | Removal of Thermal System Insulation (TSI) surfacing asbestos-containing material (ACM) and presumed asbestos-containing material (PACM). This includes ACM (>1%) applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain. |
| Class II Asbestos Work | Removal of ACM that is NOT thermal system insulation or surfacing material. This includes the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics. |
| Class III Asbestos Work | Repair and maintenance operations, where ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed. |
| Class IV Asbestos Work | Maintenance and custodial work, during which employees contact, but do not disturb, ACM or PACM. Also activities to clean up dust, waste, and debris resulting from Class I, II, and III work. |
| B. General Industry Activities | |
| Automotive Repair and Maintenance | |
| C. Laboratory Activities | |
| Research & Development | |
| D. Exempted Activities | |
| None | |

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Subject Area: **Asbestos**

Construction Industry Requirements

Effective Date: **May 2002**

Point of Contact: [Asbestos Subject Matter Expert](#)

Four Occupational Safety and Health Administration (OSHA) classes of asbestos work are listed as follows:

- **OSHA Class I asbestos work** is provided as a [Word](#) file.
 - **Removal of Thermal System Insulation (TSI) and surfacing asbestos-containing material (ACM) and presumed asbestos-containing material (PACM).** This includes ACM (>1%) applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain.
- **OSHA Class II asbestos work** is provided as a [Word](#) file.
 - **Removal of ACM that is not thermal system insulation or surfacing material.** This includes the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.
- **OSHA Class III asbestos work** is provided as a [Word](#) file.
 - **Repair and maintenance operations,** where ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed.
- **OSHA Class IV asbestos work** is provided as a [Word](#) file.
 - **Maintenance and custodial activities** during which employees contact but do not disturb ACM or PACM. This also includes activities to clean up dust, waste, and debris resulting from OSHA Class I, II, and III activities.

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Construction Industry Requirements

| OSHA Class I - Removal of TSI and surfacing ACM and PACM. | |
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| Topic | Requirements |
| Supervision/ Evaluation | <p>A <i>competent person</i>, specially trained in a course that meets the criteria of EPA's Model Accreditation Plan (40CFR part 763) for supervisor, or its equivalent, conducts on-site inspections at least once during each work shift, and at employee request.</p> <p>An on-site management-level person is trained according to the provisions of EPA regulation 40CFR61.145 (with no more than two years between training intervals) that includes applicability, notifications, material identification, waste disposal work practices, reporting and record keeping, asbestos hazards, and worker protection. Training must be provided for control procedures that cover removals including, at least:</p> <ul style="list-style-type: none"> • wetting, • local exhaust ventilation, • negative pressure enclosures, • glove-bag procedures, and • High Efficiency Particulate Air (HEPA) filters. <p>Post evidence of the training at the demolition or renovation site.</p> |
| Exposure Monitoring | <p>A <i>competent person</i> conducts an exposure assessment immediately before or at the initiation of the operation unless the operation is covered by a Negative Exposure Assessment (NEA). Conduct daily monitoring that is representative of the exposure of each employee is assigned to work within a regulated area. Until monitoring documents demonstrate that exposure will not exceed the Permissible Exposure Limit (PEL), presume that employees are exposed in excess of the Time-Weighted Average (TWA) and excursion limit.</p> |
| Periodic Monitoring | <p>Conduct daily monitoring that is representative of the exposure of each employee assigned to work within a regulated area.</p> <p>Exception: When all employees, required to be monitored daily, are equipped a positive pressure mode respirator, the employer may dispense with the daily monitoring.</p> |
| Termination of Monitoring | <p>If the periodic monitoring reveals that employee exposures are below the PEL and excursion limit, monitoring may be discontinued for those employees whose exposures are represented by the monitoring.</p> |
| Regulated Area | <p>Conduct work within regulated areas such that:</p> <ul style="list-style-type: none"> • Boundaries are set in a manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne asbestos. • Regulated area access is limited to authorized persons. • Employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the area. |

Construction Industry Requirements

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| Engineering Controls and Work Practices | <p>Engineering controls and work practices include:</p> <ul style="list-style-type: none">• Vacuum cleaners equipped with HEPA filters• Wet methods or wetting agents• Cleanup and disposal methods for wastes and debris <p>Use the following control methods to achieve compliance with the TWA permissible exposure and excursion limits:</p> <ul style="list-style-type: none">• Local exhaust ventilation equipped with HEPA filter dust collection systems• Enclosure or isolation of processes producing asbestos dust• Ventilation of the regulated area to move contaminated air away from the breathing zone of employees and toward a filtration or collection device equipped with a HEPA filter <p>Use the following emission controls for demolition or renovation activity (as per EPA regulation 40CFR61.145):</p> <ol style="list-style-type: none">1. Remove all RACM from a facility before activities begin that would break up, dislodge, or similarly disturb the material or preclude access to the material. The following are exceptions:<ul style="list-style-type: none">• Nonfriable ACM in good condition• A component that is encased in concrete (or other similarly hard material) and adequately wet during demolition• Nonfriable ACM with low probability to become crumbled, pulverized, or reduced to powder2. When a component containing RACM is taken out of the facility (as a unit or in sections):<ul style="list-style-type: none">• Adequately wet all RACM exposed during cutting or disjoining operations• Carefully lower each unit or section to ground level3. When RACM is stripped from a component while the component remains in-place; adequately wet the RACM during the stripping operation. Wetting is not required if one of the following emission control methods is used:<ul style="list-style-type: none">• Local exhaust ventilation• Glove-bag system• Leak-tight wrap to contain all RACM prior to dismantling |
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Construction Industry Requirements

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| <p>Specific Engineering Controls</p> | <p>Removal supervised by a <i>competent person</i> - for removal of more than 25 linear or 10 square feet of thermal system insulation or surfacing material - use one of the following methods to ensure that airborne asbestos does not migrate from the regulated area:</p> <ul style="list-style-type: none"> • Critical barriers must be placed over all the openings to the regulated area, except where activities are performed outdoors. • Barrier or isolation method that prevents the migration of airborne asbestos from the regulated area, as verified by perimeter area surveillance. • Isolate HVAC systems in the regulated area by sealing with a double layer of 6-mil plastic or the equivalent. • Place impermeable drop cloths on surfaces beneath all removal activity. • Cover all objects within the regulated area with impermeable drop cloths or plastic sheeting that is secured by duct tape (or equivalent). <p>If the PEL is exceeded, ventilate the regulated area to move contaminated air away from the breathing zone of employees toward a HEPA filtration or collection device. Use one or more of the following control methods:</p> <ul style="list-style-type: none"> • Negative Pressure Enclosure (NPE) systems • Glove-bag systems may be used to remove PACM or ACM from straight runs of piping and elbows and other connections. Use this system with one of the following specifications and work practices: • Negative pressure glove-bag system • Negative pressure glove-box system • Water spray process system • Small walk-in enclosure |
| <p>Alternative Control Methods</p> | <p>A <i>Certified Industrial Hygienist</i> or <i>Licensed Professional Engineer</i> certifies, in writing, that the planned control method is adequate to meet the criteria of the standard. (Where the TSI or surfacing material to be removed is 25 linear or 10 square feet or less, the evaluation may be performed by a <i>competent person</i>, and may omit consideration of perimeter or clearance monitoring that may otherwise be required.)</p> |
| <p>Prohibited Practices</p> | <p>The following are prohibited when working with asbestos containing materials:</p> <ul style="list-style-type: none"> • High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air • Compressed air • Dry sweeping, shoveling, or other dry cleanup of dust and debris • Employee rotation (as a means of reducing employee exposure to asbestos) |
| <p>Respirators</p> | <p>Provide respirators and ensure that they are used during all work where employees are exposed above the TWA or excursion limit and in emergencies.</p> |
| <p>Protective Clothing</p> | <p>Provide or require the use of protective clothing for any employee:</p> <ul style="list-style-type: none"> • Exposed above the TWA or excursion limit • For which a required NEA is not produced • Performing operations, which involve the removal of over 25 linear or 10 square feet of TSI or surfacing ACM and PACM <p>Inspect and take care of protective clothing as follows:</p> <ul style="list-style-type: none"> • The <i>competent person</i> examines work-suits worn by employees at least once per work shift for rips or tears that may occur during performance of work. • When rips or tears are detected in a work-suit while an employee is working, they must be mended or replaced immediately. |

Construction Industry Requirements

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| <p>Hygiene Facility</p> | <p>For jobs over 25 linear or 10 square feet of TSI or surfacing ACM and PACM, proceed according to the following:</p> <ul style="list-style-type: none"> • Decontamination areas are established adjacent and connected to the regulated area for the decontamination of such employees. The decontamination area consists of an equipment room, shower area, and clean room in series. The employer ensures that employees enter and exit the regulated area through the decontamination area. • Equipment rooms are supplied with impermeable, labeled bags and containers for the containment and disposal of contaminated protective equipment. • Shower areas are provided unless the employer can demonstrate that they are not feasible. The showers are adjacent both to the equipment room and the clean room, unless the employer demonstrates that this location is not feasible. Where not feasible, employees remove: • Asbestos contamination from their work suits in the equipment room using a HEPA vacuum before proceeding to a shower that is not adjacent to the work area • Contaminated work suits in the equipment room, then don clean work suits, and proceed to a shower that is not adjacent to the work area • The clean change room is equipped with a locker for each employee's use. When the employer demonstrates that it is not feasible to provide a clean change area adjacent to the work area or where the work is performed outdoors, the employer may permit employees to clean their protective clothing with a portable HEPA-equipped vacuum before such employees leave the regulated area. Following showering, such employees however must then change into street clothing in clean change areas provided by the employer. • Decontamination area entry and exit procedures must be used. • Provide lunch areas in which the airborne concentrations of asbestos are below the PEL or excursion limit. |
| | <p>For jobs involving less than 25 linear or 10 square feet of TSI or surfacing ACM and PACM, proceed according to the following:</p> <ul style="list-style-type: none"> • Establish an equipment room or area that is adjacent to the regulated area for the decontamination of employees and their equipment contaminated with asbestos (this consists of an area covered by an impermeable drop cloth on the floor or horizontal surface). • The area must be of sufficient size as to accommodate cleaning of equipment and removing Personal Protective Equipment (PPE) without spreading contamination beyond the area (as determined by visible accumulations). • Work clothing must be cleaned with a HEPA vacuum before it is removed. • All equipment and surfaces of containers filled with ACM must be cleaned prior to removing them from the equipment room or area. • Ensure that employees enter and exit the regulated area through the equipment room or area. |

Construction Industry Requirements

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| Communication of Hazards (Warning Signs) | <p>Before work is performed, inform workers of the location and quantity of ACM or PACM present in the area, and the precautions to be taken to insure that airborne asbestos is confined to the area.</p> <p>At each location where a regulated area is required, post Warning Signs that read "DANGER, ASBESTOS, CANCER AND LUNG DISEASE HAZARD, AUTHORIZED PERSONNEL ONLY".</p> <p>Where respirators and protective clothing are required post Warning Signs that read "RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA".</p> |
| Medical Surveillance | <p>Institute medical surveillance for all employees that are</p> <ul style="list-style-type: none">• engaged for 30 or more days per year in OSHA Class I work; or• exposed at or above a PEL for 30 or more days per year. <p>Evaluate (under the supervision of a physician) the physical ability of employees (required by the OSHA standard to wear a negative pressure respirator) to perform the work and use the equipment.</p> |

Construction Industry Requirements

| OSHA Class II - Removal of ACM, which is not thermal system insulation or surfacing material. (This includes, but is not limited to, asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.) | |
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| Topic | Requirements |
| Supervision/ Evaluation | <p>A <i>competent person</i>, specially trained in a course that meets the criteria of EPA's Model Accreditation Plan (40CFR part 763) for supervisor, or its equivalent, conducts on-site inspections at least once during each work shift, and at employee request. An on-site management-level person is trained according to the provisions of EPA regulation 40CFR61.145 (with no more than two years between training intervals) that includes applicability, notifications, material identification, waste disposal work practices, reporting and record keeping, asbestos hazards, and worker protection. Training must be provided for control procedures that cover removals including, at least</p> <ul style="list-style-type: none"> • wetting, • local exhaust ventilation, • negative pressure enclosures, • glove-bag procedures, and • High Efficiency Particulate Air (HEPA) filters. <p>Post evidence of the training at the demolition or renovation site.</p> |
| Exposure Monitoring | <p>A <i>competent person</i> conducts an exposure assessment immediately before or at the initiation of the operation unless the operation is covered by a Negative Exposure Assessment (NEA). Conduct daily monitoring that is representative of the exposure of each employee is assigned to work within a regulated area.</p> |
| Periodic Monitoring | <p>Conduct daily monitoring that is representative of the exposure of each employee assigned to work within a regulated area. Exception: When all employees, required to be monitored daily, are equipped a positive pressure mode respirator, the employer may dispense with the daily monitoring.</p> |
| Termination of Monitoring | <p>If the periodic monitoring reveals that employee exposures, as indicated by statistically reliable measurements, are below the Permissible Exposure Limit (PEL) and excursion limit, monitoring may be discontinued for those employees whose exposures are represented by such monitoring.</p> |
| Regulated Area | <p>Conduct work within regulated areas such that:</p> <ul style="list-style-type: none"> • Boundaries are set in a manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne asbestos • Regulated area access is limited to authorized persons • Employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the area |
| Engineering controls and work practices: General for all Work | <p>Engineering controls and work practices include:</p> <ul style="list-style-type: none"> • Vacuum cleaners equipped with HEPA filters • Wet methods or wetting agents • Cleanup and disposal methods for wastes and debris |

Construction Industry Requirements

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| | <p>Use the following control methods to achieve compliance with the TWA permissible exposure and excursion limits:</p> <ul style="list-style-type: none">• Local exhaust ventilation equipped with HEPA filter dust collection systems• Enclosure or isolation of processes producing asbestos dust• Ventilation of the regulated area to move contaminated air away from the breathing zone of employees and toward a filtration or collection device equipped with a HEPA filter |
| Specific Engineering Controls: VAT Flooring | <p>For vinyl and asphalt flooring materials removal, proceed according to the following guidelines:</p> <ul style="list-style-type: none">• Do not sand flooring or its backing• Use vacuums equipped with a HEPA filter, disposable dust bag, and metal floor tool (no brush) to clean floors• Remove resilient sheeting by cutting with wetting of the snip point and wetting during delamination• Do not rip-up resilient sheet floor material as it is prohibited• Use wet methods for all scraping of residual adhesive or backing• Do not dry sweep• Do not mechanically chip unless performed in a negative pressure enclosure• Remove tiles intact, unless the employer demonstrates that intact removal is not possible• When tiles are heated and can be removed intact, wetting may be omitted• Assume that resilient flooring material including associated mastic and backing to be asbestos-containing unless an industrial hygienist determines that it is asbestos-free using recognized analytical techniques |

Construction Industry Requirements

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| <p>Specific Engineering Controls: Roofing</p> | <p>For roofing material removal, proceed according to the following guidelines:</p> <ul style="list-style-type: none"> • Remove roofing material in an intact state to the extent feasible. • Use wet methods to remove roofing materials that are not intact, or that will be rendered not intact during removal, unless such wet methods are not feasible or will create safety hazards. • Continuously mist cutting machines during use, unless a competent person determines that misting substantially decreases worker safety. • When using a power roof cutter, collect all dust resulting from the cutting operation by a HEPA dust collector, HEPA vacuumed along the cut line, collected by gently sweeping and then carefully and completely wiping up the still-wet dust and debris left along the cut line. Immediately bag or place the dust and debris in covered containers. • Do not drop or thrown asbestos-containing material that has been removed from a roof to the ground. Unless the material is carried or passed to the ground by hand, lower it to the ground via covered, dust-tight chute, crane or hoist. • Lower any ACM that is not intact to the ground as soon as is practicable, but in any event no later than the end of the work shift. While the material remains on the roof keep it wet, place in it an impermeable waste bag, or wrap it in plastic sheeting. • Lower intact ACM to the ground as soon as is practicable, but in any event no later than the end of the work shift. • Upon being lowered, transfer unwrapped material to a closed receptacle in such manner so as to preclude the dispersion of dust. • Isolate roof level heating and ventilation air intake sources or shut down the ventilation system. <p><i>Removal or repair of sections of intact roofing less than 25 square feet does not require use of wet methods or HEPA vacuuming as long as manual methods are used and no visible dust is created by the removal method used.</i></p> |
| <p>Specific Engineering Controls: AC Siding and Panels</p> | <p>For cementitious asbestos-containing siding and shingles or transite panels removal on building exteriors (other than roofs), proceed according to the following guidelines:</p> <ul style="list-style-type: none"> • Do not cut, abrade, or break siding, shingles, or transite panels, unless demonstrated that these methods are less likely to result in asbestos fiber release • Spray each panel or shingle with amended water prior to removal • Lower unwrapped or unbagged panels or shingles immediately to the ground via covered dust-tight chute, crane or hoist, or place in an impervious waste bag or wrapped in plastic sheeting and lower to the ground no later than the end of the work shift • Cut nails flat with sharp instruments |
| <p>Specific Engineering Controls: Gaskets</p> | <p>For gaskets containing ACM removal, proceed according to the following guidelines:</p> <ul style="list-style-type: none"> • Use a glove-bag, if a gasket is visibly deteriorated and unlikely to be removed intact • Immediately place gasket in a disposal container • Perform any scraping to remove residue wet |

Construction Industry Requirements

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| Specific Engineering Controls: Other Operations | <p>When performing any other OSHA Class II removal for which specific controls have not been listed in the OSHA standard, proceed according to the following guidelines:</p> <ul style="list-style-type: none"> • Thoroughly wet the material with amended water prior to and during its removal • Remove the material in an intact state unless it is demonstrated that intact removal is not possible • Do not cut, abrade or break the material unless demonstrated that methods less likely to result in asbestos fiber release are not feasible • Immediately bag, wrap or kept wetted asbestos-containing material removed until transferred to a closed receptacle, no later than the end of the work shift |
| Alternative Work Practices and Controls | <p>Substitute different or modified engineering and work practice controls if:</p> <ul style="list-style-type: none"> • Data representing the employee exposure during the use of method demonstrates that employee exposure will not exceed the PELs under any anticipated circumstances • A <i>competent person</i> certifies in writing, that the different or modified controls are adequate to reduce direct and indirect employee exposure to below the PELs under all expected conditions of use and that the method meets the requirements of the OSHA standard |
| Prohibited Practices | <p>The following are prohibited when working with asbestos containing materials:</p> <ul style="list-style-type: none"> • High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air • Compressed air • Dry sweeping, shoveling, or other dry cleanup of dust and debris • Employee rotation (as a means of reducing employee exposure to asbestos) |
| Respirators | <p>Provide respirators, and ensure that they are used in the following circumstances:</p> <ul style="list-style-type: none"> • Where the ACM is not removed in a substantially intact state • Where the employer does not produce a Negative Exposure Assessment (NEA) • When work is not performed using wet methods, with the exception that respirators need not be worn during removal of ACM from sloped roofs when a NEA has been made and the ACM is removed in an intact state • During all work covered by this section where employees are exposed above the TWA or excursion limit • In asbestos related emergency situations |
| Protective Clothing | <p>Provide or require the use of protective clothing for any employee:</p> <ul style="list-style-type: none"> • Exposed above the TWA and/or excursion limit • For which a required NEA is not produced <p>Inspect and take care of protective clothing as follows:</p> <ul style="list-style-type: none"> • The <i>competent person</i> examines work-suits worn by employees at least once per work shift for rips or tears that may occur during performance of work • When rips or tears are detected in a work-suit while an employee is working, they must be mended or replaced immediately |
| Hygiene Facilities and Practices for Employees | <p>Operations where exposures exceed a PEL or where there is no negative exposure assessment produced before the operation:</p> <ul style="list-style-type: none"> • Establish an equipment room or area that is adjacent to the regulated area for the decontamination of employees and their equipment which is covered by an impermeable drop cloth on the floor or horizontal working surface |

Construction Industry Requirements

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| | <ul style="list-style-type: none"> • The area must be of sufficient size as to accommodate cleaning of equipment and removing personal protective equipment without spreading contamination beyond the area (as determined by visible accumulations) • Clean work clothing with a HEPA vacuum before it is removed • Clean all equipment and surfaces of containers filled with ACM prior to removing them from the equipment room or area • Ensure that employees enter and exit the regulated area through the equipment room or area |
| <p>Communication of Hazards (Warning Signs)</p> | <p>Before work is performed, inform workers of the location and quantity of ACM or PACM present in the area, and the precautions to be taken to insure that airborne asbestos is confined to the area.</p> <p>At each location where a regulated area is required, post Warning Signs that read "DANGER, ASBESTOS, CANCER AND LUNG DISEASE HAZARD, AUTHORIZED PERSONNEL ONLY".</p> <p>Where respirators and protective clothing are required post Warning Signs that read "RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA".</p> |
| <p>Medical Surveillance</p> | <p>Institute medical surveillance for all employees that are</p> <ul style="list-style-type: none"> • engaged for 30 or more days per year in OSHA Class II work; or • exposed at or above a PEL for 30 or more days per year. <p>Evaluate (under the supervision of a physician) the physical ability of employees (required by the OSHA standard to wear a negative pressure respirator) to perform the work and use the equipment.</p> |

Construction Industry Requirements

| OSHA Class III - Repair and maintenance operations, where ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed. | |
|--|--|
| Topic | Requirements |
| Supervision/ Evaluation | A <i>competent person</i> , trained in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40CFR763.92(a)(2), provides on-site inspections at intervals sufficient to assess whether conditions have changed, and at any reasonable time at employee request. |
| Exposure Monitoring | A <i>competent person</i> conducts an exposure assessment immediately before or at the initiation of the operation unless the operation is covered by a Negative Exposure Assessment (NEA). Conduct periodic monitoring of all work where exposures are expected to exceed Permissible Exposure Limits (PELs), at intervals sufficient to document the validity of the exposure prediction. |
| Periodic Monitoring | Conduct periodic monitoring of all work where exposures are expected to exceed a PEL, at intervals sufficient to document the validity of the exposure prediction. |
| Termination of Monitoring | If the periodic monitoring reveals that employee exposures, as indicated by statistically reliable measurements, are below the PEL and excursion limit, monitoring may be discontinued for those employees whose exposures are represented by such monitoring. |
| Regulated Area | Conduct work within regulated areas such that <ul style="list-style-type: none"> • Boundaries are set in a manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne asbestos • Regulated area access is limited to authorized persons • Employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the area |
| Engineering Controls and Work Practices | Engineering controls and work practices include <ul style="list-style-type: none"> • Vacuum cleaners equipped with HEPA filters • Wet methods or wetting agents • Cleanup and disposal methods for wastes and debris <p>Use the following control methods to achieve compliance with the TWA permissible exposure and excursion limits:</p> <ul style="list-style-type: none"> • Local exhaust ventilation equipped with HEPA filter dust collection systems • Enclosure or isolation of processes producing asbestos dust • Ventilation of the regulated area to move contaminated air away from the breathing zone of employees and toward a filtration or collection device equipped with a HEPA filter |
| Specific Engineering Controls | Use engineering and work practice controls that minimize the exposure to employees performing the asbestos work and to bystander employees. Use wet methods to perform the work. To the extent feasible, use local exhaust ventilation to perform the work. Where the disturbance involves drilling, cutting, abrading, sanding, chipping, breaking, or sawing of thermal system insulation or surfacing material, use impermeable drop cloths and mini-enclosures or glove bag systems (or another isolation method) to isolate the operation. Where monitoring results show the PEL has been exceeded, contain the area using impermeable drop cloths and plastic barriers or their equivalent, or isolate the |

Construction Industry Requirements

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| | <p>operation using a control system.</p> <p>Employees must wear respirators when performing OSHA Class III jobs, which involve the disturbance of thermal system insulation or surfacing material, or where the employer does not produce a NEA or where monitoring results show a PEL has been exceeded.</p> |
| Prohibited Practices | <p>The following are prohibited when working with asbestos-containing materials:</p> <ul style="list-style-type: none"> • High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air • Compressed air • Dry sweeping, shoveling, or other dry cleanup of dust and debris • Employee rotation (as a means of reducing employee exposure to asbestos) |
| Respirators | <p>Provide respirators, and ensure that they are used</p> <ul style="list-style-type: none"> • Where the ACM is not removed in a substantially intact state • Where the employer does not produce a NEA • When work is not performed using wet methods, with the exception that respirators need not be worn during removal of ACM from sloped roofs when a NEA has been made and the ACM is removed in an intact state • During all work covered by this section where employees are exposed above the TWA or excursion limit • Where TSI or surfacing ACM or PACM is being disturbed • In asbestos related emergency situations |
| Protective Clothing | <p>Provide or require the use of protective clothing for any employee:</p> <ul style="list-style-type: none"> • Exposed above the TWA or excursion limit • For which a required NEA is not produced <p>Inspect and take care of protective clothing as follows:</p> <ul style="list-style-type: none"> • The <i>competent person</i> examines work-suits worn by employees at least once per work shift for rips or tears that may occur during performance of work • When rips or tears are detected in a work-suit while an employee is working, they must be mended or replaced immediately |
| Hygiene Facilities and Practices for Employees | <p>For operations where exposures exceed the PEL or where there is no NEA produced before the operation, proceed according to the following:</p> <ul style="list-style-type: none"> • Establish an equipment room or area adjacent to the regulated area for the decontamination of employees and their equipment • The established area must be of sufficient size as to accommodate cleaning of equipment and removing personal protective equipment without spreading contamination beyond the area (as determined by visible accumulations) • Clean work clothing with a HEPA vacuum before removing • Clean all equipment and surfaces of containers filled with ACM before removing them from the equipment room or area • Ensure that employees enter and exit the regulated area through the equipment room or area |

Construction Industry Requirements

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| Communication of Hazards (Warning Signs) | <p>Before work is performed, inform workers of the location and quantity of ACM or PACM present in the area, and the precautions to be taken to insure that airborne asbestos is confined to the area.</p> <p>At each location where a regulated area is required, post Warning Signs that read "DANGER, ASBESTOS, CANCER AND LUNG DISEASE HAZARD, AUTHORIZED PERSONNEL ONLY".</p> <p>Where respirators and protective clothing are required, post Warning Signs that read "RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA".</p> |
| Medical Surveillance | <p>Institute medical surveillance for all employees that are</p> <ul style="list-style-type: none">• engaged for 30 or more days per year in OSHA Class III work; or• exposed at or above a PEL for 30 or more days per year. <p>Evaluate (under the supervision of a physician) the physical ability of employees (required by the OSHA standard to wear a negative pressure respirator) to perform the work and use the equipment.</p> |

OSHA Class IV - Maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste, and debris resulting from OSHA Class I, II, and III activities.

| Topic | Requirements |
|---|---|
| Supervision/ Evaluation | A <i>competent person</i> , trained in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40CFR763.92(a)(2), provides on-site inspections at intervals sufficient to assess whether conditions have changed, and at any reasonable time at employee request. |
| Exposure Monitoring | A <i>competent person</i> conducts an exposure assessment immediately before or at the initiation of the operation unless the operation is covered by a Negative Exposure Assessment (NEA). Conduct periodic monitoring of all work where exposures are expected to exceed a Permissible Exposure Limit (PEL), at intervals sufficient to document the validity of the exposure prediction. |
| Periodic Monitoring | Conduct periodic monitoring of all work where exposures are expected to exceed a PEL, at intervals sufficient to document the validity of the exposure prediction. |
| Termination of Monitoring | If the periodic monitoring reveals that employee exposures, as indicated by statistically reliable measurements, are below the PEL or excursion limit, monitoring may be discontinued for those employees whose exposures are represented by the monitoring. |
| Regulated Area | None (unless airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed the PEL). |
| Engineering Controls and Work Practices | Engineering controls and work practices include <ul style="list-style-type: none"> • Vacuum cleaners equipped with HEPA filters • Wet methods or wetting agents • Cleanup and disposal methods for wastes and debris Use the following control methods to achieve compliance with the TWA permissible exposure and excursion limits: <ul style="list-style-type: none"> • Local exhaust ventilation equipped with HEPA filter dust collection systems • Enclosure or isolation of processes producing asbestos dust • Ventilation of the regulated area to move contaminated air away from the breathing zone of employees and toward a filtration or collection device equipped with a HEPA filter |
| Specific Engineering Controls | Employees cleaning up debris and waste in a regulated area where respirators are required must wear respirators. |

EPA Notification Requirements

Before demolition or renovation, thoroughly inspect the affected facility for the presence of asbestos, including Category I or II non-friable ACM.

| Construction Activity | Reason for Activity | Required Action | Notification Timing |
|--------------------------------|--|--|--|
| Demolition | Contains a combined amount of Regulated Asbestos Containing Material (RACM) that is at least: <ul style="list-style-type: none"> • 80 linear meters (260 linear feet) on pipes, • 15 square meters (160 square feet) on other facility components, or • 1 cubic meter (35 cubic feet). | <ul style="list-style-type: none"> • Notification as per 40CFR61.145 (b) • Emission control as per 40CFR61.145 (c). | At least 10 working days before stripping or removal work or any other activity begins that would break up, dislodge, or disturb asbestos material. |
| | Contains a combined amount of RACM that is less than: <ul style="list-style-type: none"> • 80 linear meters (260 linear feet) on pipes, • 15 square meters (160 square feet) on other facility components, or • 1 cubic meter (35 cubic feet). | | |
| | The removal of any structural member, regardless of the presence of asbestos in the structure. | | |
| | This results from an order of a State or local government agency, issued because the facility is structurally unsound and in danger of imminent collapse. | | |
| Nonscheduled Renovation | Contains a combined amount of RACM to be stripped, removed, dislodged, cut, drilled, or similarly disturbed that is at least <ul style="list-style-type: none"> • 80 linear meters (260 linear feet) on pipes, • 15 square meters (160 square feet) on other facility components, or • 1 cubic meter (35 cubic feet). | <ul style="list-style-type: none"> • Notification as per 40CFR61.145 (b)(3) • Emission control as per 40CFR61.145 (c). | At least 10 working days before asbestos stripping or removal work or any other activity begins that would break up, dislodge, or disturb asbestos material. |

| | | | |
|-----------------------------|--|--|--|
| Planned Renovation | Planned renovation operations involving individual nonscheduled operations predict the combined additive amount of RACM to be removed or stripped during a calendar year of January 1 through December 31. | <ul style="list-style-type: none"> • Notification as per 40 CFR61.145(b)(3) • Emission control as per 40CFR61.145 (c). | At least 10 working days before the end of the calendar year preceding the year for which notice is being given. |
| Emergency Renovation | A sudden, unexpected event that, if not immediately attended to, presents a safety or public health hazard. | <ul style="list-style-type: none"> • Notification as per 40 CFR61.145(b)(3) • Emission control as per 40CFR61.145 (c) | As soon as possible before any handling activity, but not later than the following workday. |
| Revised Notification | Changes from the original notification such as <ul style="list-style-type: none"> • Contractor • Quantity of ACM increase • Date Change • Landfill. | | As soon as possible. |

General Industry Requirements

The following provisions must be addressed in Department/Division written procedures for non-construction uses of asbestos. Engineering controls and work practices to reduce employee exposure to materials containing asbestos must be used.

| OSHA & EPA Engineering Controls and Work Practices | |
|---|--|
| Topic | Requirements |
| Supervision/ Evaluation | Normal BNL supervision involves no specific requirements or training. |
| Exposure Monitoring | <p>Perform initial monitoring of employees who are, or reasonably expected to be exposed to airborne concentrations at or above the Time-Weighted Average (TWA) Permissible Exposure Limit (PEL) or excursion limit. (Where there is objective data that demonstrates that asbestos is not capable of being released in airborne concentrations at or above the TWA PEL or excursion limit under the expected conditions of processing, use, or handling, no initial monitoring is required.)</p> <p>Periodic monitoring at no more than a six-month interval for employees whose exposures may reasonably be foreseen to exceed the TWA PEL or excursion limit.</p> |
| Regulated Area | <p>Establish regulated areas wherever airborne concentrations of asbestos or PACM are in excess of the TWA or excursion limit.</p> <p>Conduct work within regulated areas such that</p> <ul style="list-style-type: none"> • The boundaries are set in a manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne asbestos Regulated area access is limited to authorized persons • An appropriate respirator is supplied, if required • Employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the area |
| Respiratory Protection | <p>Provide respirators and ensure that they are used:</p> <ul style="list-style-type: none"> • During the interval necessary to install or implement feasible engineering and work practice controls • In work operations, such as maintenance and repair activities, or other activities for which engineering and work practice controls are not feasible • In work situations where feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the TWA or excursion limit • In asbestos related emergency situations |
| Protective Work Clothing and Equipment | <p>For employees exposed to asbestos above the TWA or excursion limit, or where the possibility of eye irritation exists, provide and ensure the use of:</p> <ul style="list-style-type: none"> • Coveralls or similar full-body work clothing • Gloves, head coverings, and foot coverings • Face shields, vented goggles, or other appropriate protective equipment |

| | |
|----------------------------------|---|
| Engineering Controls | <p>Maintain employee exposure below the TWA or excursion limit, except to the extent that such controls are not feasible.</p> <p>For local exhaust ventilation and dust collection systems:</p> <ul style="list-style-type: none"> • Produce no visible emissions to the outside air from these operations or from any building or structure or clean emissions from these operations containing particulate asbestos material before they escape or are vented to the outside air • Monitor each potential source of asbestos emissions, including air-cleaning devices, at least once each day during daylight hours for visible emissions to the outside air during periods of operation • Inspect each air-cleaning device at least once each week for proper operation, the presence of tears, holes, and abrasions in filter bags (without dismantling other than opening the device), and for dust deposits on the clean side of bags • Maintain records of the results of visible emission monitoring and air-cleaning device inspections that include the following: <ul style="list-style-type: none"> • Date and time of each inspection • Presence or absence of visible emissions • Condition of fabric filters, including presence of any tears, holes, and abrasions • Presence of dust deposits on clean side of fabric filters • Brief description of corrective actions taken, including the date and time • Submit a quarterly copy of the visible emission monitoring records to the EPA Administrator if visible emissions occurred during the report period • Equip hand- and power-operated tools that produce or release fibers (saws, scorers, abrasive wheels, and drills) with local exhaust ventilation systems • Use wet methods when practical (handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state sufficient to prevent the emission of airborne fibers) |
| Prohibited Activities | <p>The following activities are prohibited:</p> <ul style="list-style-type: none"> • Using compressed air to remove asbestos or materials containing asbestos unless the compressed air is used in conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air • Sanding asbestos-containing flooring material |
| Hygiene Facilities and Practices | <p>Provide clean change rooms, showers, and a lunch room for employees who work in areas where their airborne exposure to asbestos is above the TWA or excursion limit.</p> |

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| Employee Information | <p>Employees who repair and replace automotive brakes and clutches may be exposed to asbestos fibers. The following signs and labels must be provided:</p> <ul style="list-style-type: none"> • Post Warning Signs at each regulated area • Affix Warning Labels to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers |
| Housekeeping | <p>The following good housekeeping practices must be practiced:</p> <ul style="list-style-type: none"> • Maintain surfaces as free as practicable of ACM waste and debris and accompanying dust • Prompt clean up of all spills and sudden releases of material containing asbestos as soon as possible • Do not clean surfaces contaminated with asbestos by the use of compressed air • Use HEPA-filtered vacuum equipment for vacuuming asbestos containing waste and debris (minimizes the reentry of asbestos into the workplace) • Shovel dry sweep and cleanup of asbestos only where vacuuming or wet cleaning is not feasible <p>For care of asbestos-containing flooring material</p> <ul style="list-style-type: none"> • Strip finishes using low abrasion pads at speeds lower than 300 rpm and wet methods • Only burnish or dry buff asbestos containing flooring that has sufficient finish so that the pad cannot contact the asbestos containing material |

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|----------------------|--|
| Posting and Notices | <p>For installed ACM:</p> <ul style="list-style-type: none"> • Determine the presence, location, and quantity of ACM and/or PACM at the work site • Inform employees who will perform housekeeping activities in areas that contain ACM or PACM of the presence and location of ACM or PACM. Provide Warning Signs at: <ul style="list-style-type: none"> • Each regulated area • Where the use of respirators and protective clothing is required • At the entrance to mechanical rooms/areas in which employees reasonably can be expected to enter and which contain ACM or PACM • Warning Labels must be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers (signs may be posted in place of labels) |
| Medical Surveillance | <p>Institute a medical surveillance program for all employees who are or will be exposed to airborne concentrations of fibers of asbestos at or above the TWA or excursion limit. Periodic medical examinations must be made available on an annual basis.</p> |

Warning Label and Sign Content

| Purpose | Content |
|---|--|
| Warning signs that demarcate the regulated area | DANGER ASBESTOS, CANCER AND LUNG DISEASE HAZARD AUTHORIZED PERSONNEL ONLY |
| Warning signs where respirators and protective clothing is required | DANGER ASBESTOS, CANCER AND LUNG DISEASE HAZARD AUTHORIZED PERSONNEL ONLY, RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA |
| Labels affixed to all products containing asbestos | DANGER CONTAINS ASBESTOS FIBERS AVOID CREATING DUST CANCER AND LUNG DISEASE HAZARD |
| Labels affixed to all bags containing asbestos | DANGER CONTAINS ASBESTOS FIBERS AVOID CREATING DUST CANCER AND LUNG DISEASE HAZARD NAME OF WASTE GENERATOR: LOCATION GENERATED: |
| Labels affixed to reusable clothing to be laundered | DANGER CONTAINS ASBESTOS FIBERS AVOID CREATING DUST CANCER AND LUNG DISEASE HAZARD |
| Labels on previously installed PACM or ACM. Post the entrance to room/areas or affix labels to the surface. | DANGER CONTAINS ASBESTOS FIBERS AVOID CREATING DUST CANCER AND LUNG DISEASE HAZARD |
| Labels affixed to dumpsters during loading and unloading | DANGER ASBESTOS DUST HAZARD CANCER AND LUNG DISEASE HAZARD AUTHORIZED PERSONNEL ONLY |

ASBESTOS WASTE DISPOSAL FORM

Instructions: In order to maintain an accurate record of asbestos waste and its point of origin, the following information must be filled out and sent to the Asbestos Abatement Engineer, R. Scheidet, Building 134C.

| Generator Information | | |
|---|------------------|------------------------|
| Brookhaven National Laboratory Upton, NY 11973 | | Job/Task Order Number: |
| User Contact: | Building Number: | Location: |
| Project: | | |
| Labor Group: | | |

| Disposal Details | | |
|--|-------------------|--------------------------------------|
| Total Quantity | Bags: | or Yd ³ /M ³ : |
| *Friable ACM: | *Non-friable ACM: | Miscellaneous Material: |
| General description of disposal/bag content: | | |
| Comment: | | |

* Indicate quantities in linear feet/meters or ft²/m².

Signature: _____

Date _____

Print Name: _____



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Find Subject Areas: Index Categories Alpha

Show Side Menu Search Subject Areas & Legacy Documents:

Subject Area: **Asbestos**

Notification of Demolition and Renovation Form

Effective Date: **May 2002**

Point of Contact: [Asbestos Subject Matter Expert](#)

The Notification of Demolition and Renovation Form is provided as [Word](#) file.

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This form is submitted only by the Plant Engineering Asbestos Abatement Engineer.

The only official copy of this file is the one online in SBMS. Before using a printed copy, verify that it is the most current version by checking the document effective date on the BNL SBMS website.

1.0-052002/standard/1f/1f08e011.htm

Send a question or comment to the [SBMS Help Desk](#)
[Disclaimer](#)

NOTIFICATION OF DEMOLITION AND RENOVATION

This form is submitted only by the Plant Engineering Abatement Engineer.

I TYPE OF NOTIFICATION (O = Original/R = Revised)

II FACILITY INFORMATION (Identify owner, removal contractor, and other operator)

OWNER:

Address:

City:

State:

Zip:

Contact:

Tel:

REMOVAL CONTRACTOR:

Address:

City:

State:

Zip:

Contact:

Tel:

III. TYPE OF OPERATION (D = Demolition/R = Renovation/E = Emergency)

IV. IS ASBESTOS PRESENT? (Yes/No)

V. FACILITY DESCRIPTION

Bldg. Name:

Address:

City:

State:

County:

Site Location: Site

Building Size:

Ft²/M²

of floors:

Age in years:

Present use:

Prior Use:

VI. PROCEDURE, INCLUDING ANALYTICAL METHOD USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL:

VII. APPROXIMATE AMOUNT OF RACM TO BE REMOVED

Pipes

Linear Feet/Linear Meters

Surface Area

Square Feet/Square meters

Volume RACM Off facility Component

Cubic Feet/Cubic Meters

VIII. SCHEDULED DATES OF ASBESTOS REMOVAL (MM/DD/YY) Start: Completion:

IX. SCHEDULED DATES OF DEMO/RENOVATION (MM/DD/YY) Start: Completion:

X. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:

NOTIFICATION OF DEMOLITION AND RENOVATION (continued)

XI. DESCRIPTION OF ENGINEERING CONTROLS AND WORK PRACTICES TO BE USED TO CONTROL EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE:

XII. WASTE TRANSPORTER

WASTE TRANSPORTER #1

Name:

Address:

City:

State:

Zip:

Contact person:

Telephone:

XIII. WASTE DISPOSAL SITE

Name:

Address:

City:

State:

Zip:

Telephone:

XIV. FOR EMERGENCY RENOVATIONS

Date and Hour of Emergency:

Description of the Sudden, Unexpected Event:

Explanation of how the event caused unsafe conditions or would cause equipment damage or an unreasonable financial burden:

XV. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER.

XVI. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40CFR PART 61, SUBPART M) WILL BE ON-SITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS. (Required 1 year after promulgation)

Signature of Owner/Operator

Date

XVII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT.

Signature of Owner/Operator

Date



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Find Subject Areas:

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Definitions: Asbestos

Effective Date: **May 2002**Point of Contact: [Asbestos Subject Matter Expert](#)

| Term | Definition |
|---|---|
| asbestos | <p>Any of six naturally occurring mineral forms characterized by being extremely fibrous. Two groups exist: amphibole asbestos (with five various forms such as amosite, crocidolite, anthophyllite, tremolite, and actinolite) and serpentine asbestos (chrysotile). Asbestos could be any one of these mineral forms mentioned above that has been chemically treated or altered.</p> <p>Note: Types of materials that may contain asbestos include asbestos-containing material (ACM), presumed asbestos-containing material (PACM), and thermal system insulation (TSI).</p> |
| Asbestos Competent Person | <p>A person who</p> <ul style="list-style-type: none"> • is trained to identify existing asbestos hazards in the workplace and select the appropriate control strategy for asbestos exposure; • has the authority to take prompt corrective measures to eliminate them; and • is trained for performing Occupational Safety and Health Administration (OSHA) Class I, II, III, or IV work. <p>Note: For OSHA Class I and II, the Competent Person must meet the criteria of EPA's Model Accreditation Plan (40 CFR part 763) for SUPERVISOR, or its equivalent, or higher level qualification (including Project Designer).</p> <p>Note: For OSHA Class III and IV, the Competent Person must meet the EPA requirements for training of LOCAL EDUCATION AGENCY MAINTENANCE AND CUSTODIAL STAFF as set forth at 40 CFR 763.</p> |
| asbestos-containing material (ACM) | Any material containing more than 1 percent asbestos. |
| Asbestos Project Designer | A person who has satisfactorily completed an Environmental Protection Agency (EPA) Model Program as an Asbestos Project Designer. |
| Asbestos Sampler | A person who has satisfactorily completed an Environmental Protection Agency (EPA) Model Program as an asbestos inspector, supervisor, or worker/handler (working under the direction of an asbestos inspector). |
| Category I nonfriable asbestos-containing material (ACM) | Asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined by using Polarized Light Microscopy. |
| Category II nonfriable asbestos-containing material (ACM) | Any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos as determined by using Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. |

| | |
|---|---|
| material (ACM) | dry, cannot be crumbled, pulverized, or reduced to powder by hand-pressure. |
| container | A bottle, box, jar, bag, vial, or other vessel in which asbestos or an asbestos-containing material is stored. |
| demolition | The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations (such as razing, removing, or stripping of asbestos products) or the intentional burning of any facility. |
| disturbance | Activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM. In no circumstance must the amount of ACM or PACM disturbed exceed that which can be contained in one glove bag or waste bag, which must not exceed 60 inches in length and width. |
| emergency renovation operation | <p>A renovation operation that was not planned but results from a sudden, unexpected event that, if not immediately attended to, presents a safety or public health hazard. This operation is necessary to</p> <ul style="list-style-type: none"> • Protect equipment from damage, or • Avoid imposing an unreasonable financial burden. <p>This term includes operations necessitated by nonroutine failures of equipment.</p> |
| fiber | A particulate form of asbestos, 5 micrometers or longer, with a length-to-diameter ratio of at least 3 to 1. |
| friable | Asbestos-containing material capable of releasing fibers under hand-pressure. |
| High-efficiency particulate air (HEPA) filter | A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter. |
| Laboratory scale | Work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person. Laboratory scale excludes those workplaces whose function is to produce commercial quantities of materials. |
| Negative exposure assessment (NEA) | A demonstration by the employer that employee exposure during an operation is expected to be consistently below the permissible exposure limits. |
| Nonscheduled renovation operations | A renovation operation necessitated by the routine failure of equipment, which is expected to occur within a given period based on past operating experience, but for which an exact date cannot be predicted. |
| OSHA Class I asbestos work | Activities involving the removal of TSI and surfacing ACM and PACM. |
| OSHA Class II asbestos work | Activities involving the removal of ACM that is not TSI or surfacing material. This includes the removal of asbestos-containing wallboard, floor tile, and sheeting, roofing and siding shingles, and construction mastics. |
| OSHA Class III asbestos work | Repair and maintenance operations, where ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed. |
| OSHA Class IV asbestos work | Maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste, and debris resulting from OSHA Class I, II, or III activities. |
| Presumed Asbestos-Containing Material (PACM) | Thermal system insulation and surfacing material found in buildings constructed before 1980. |

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| Regulated Area | <p>An area established to demarcate work areas where</p> <ul style="list-style-type: none"> • OSHA Class I, II, or III asbestos work is conducted; • Adjoining areas where debris and waste from such asbestos work accumulate; • Where airborne concentrations of asbestos exceed the permissible exposure limit. |
| Regulated Asbestos-Containing Material (RACM) | <p>A material containing any one of the following:</p> <ul style="list-style-type: none"> • Friable (readily crumbled or brittle) asbestos material; • Category I nonfriable ACM that has become friable; • Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; • Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations. |
| removal | All operations where ACM or PACM is taken out or stripped from structures or substrates, and includes demolition operations. |
| renovation | The modification of any portion of an existing structure (such as a facility) in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting structural members are wrecked or taken out are demolitions. |
| Thermal System Insulation (TSI) | Asbestos-containing materials applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat loss or gain. Thermal system insulation ACM contains more than 1% asbestos. |

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Revision History of this Subject Area

| Date | Description | Management System |
|----------|--|--------------------------|
| May 2002 | <p>This subject area describes procedures for ensuring the safest handling of the types of asbestos encountered at BNL by describing restrictions and permitted operations.</p> <p>This subject area provides information on how to identify, sample, remove, dispose of, and work with asbestos-containing materials. This information ensures compliance with OSHA while protecting workers and building occupants. This subject area also gives information on the types of documentation that are involved in asbestos work.</p> | Worker Safety and Health |

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