

# ASBESTOS MANAGEMENT

There has been discussion about asbestos containing materials (ACM) in CU buildings and the possible hazard they may pose to building occupants. Although various diseases have been linked with *industrial* exposure to airborne asbestos, the presence of asbestos in a building does not mean that the health of building occupants is endangered. As long as ACM remains in good condition and is not disturbed, the presence of these materials does not represent a hazard. However, when building maintenance, repair, renovation, or other activities disturb ACM, asbestos fibers can be released into the air creating a potential hazard to building occupants.

Therefore, UCD has an [Asbestos Control Program](#) in place to protect occupants and workers with potential to come in contact with ACM. The following information is provided for the general campus community (click on the topic links). For additional information [contact Environmental Health and Safety](#) at 303-724-0242.

<a href="#">What is asbestos?</a>	<a href="#">How can it affect me?</a>	<a href="#">Training</a>
<a href="#">Where is asbestos found?</a>	<a href="#">Information in Spanish</a>	<a href="#">Your Responsibility</a>

The section called “[YOUR RESPONSIBILITY](#)” includes additional information for managers and workers involved in building activities with the potential to disturb ACM. This information is intended mostly for staff who either conduct or contract work activities such as:

- Construction/renovation
- Demolition
- Repair
- Installation of wiring/security systems/communication systems
- Earth work
- Grounds upkeep

## ***What is Asbestos?***

Asbestos is a generic term referring to a family of naturally occurring silicate minerals with a fibrous structure. Types of asbestos minerals most commonly used in commercial products were Chrysotile, Amosite and Crocidolite with other forms being less common. Asbestos is known to pose human health hazards. Typically this is the result of inhaling asbestos fibers into the lungs. Prolonged exposure to elevated amounts of airborne asbestos fibers can cause:

- Asbestosis - a fibrotic lung disease (which causes scarring of the alveoli and affects the body's ability to oxygenate blood).
- lung cancer (particularly in those who also smoke), and
- mesothelioma (cancer of the pleura [a membrane/lining of the lung] or cancer of the peritoneum [a lining of the abdominal cavity] – both are very rare).

Asbestos exposure is implicated in some cancers of the digestive tract, but this correlation is not broadly supported.

## How can it affect me?

Left in tact, ACM poses minimal risk. However, when damaged, materials containing asbestos fibers (ACM) can release these fibers into the air that we breathe. Repeated exposure to high levels of asbestos fibers can cause the illnesses mentioned (cancer and asbestosis). That is why it is important to avoid disturbing [materials that contain asbestos](#) (such as pipe insulation, floor tiles, wall and ceiling textures, etc.). If you don't know if a material contains asbestos, you can have it tested, or assume that it does and act accordingly.

Activities with the potential to disturb asbestos in building materials include, but are not limited to:

- Hitting overhead pipes with ladders, mops, or other equipment
- Nailing or drilling into ACM such as walls and doors
- Affixing materials to ceiling tiles; textured ceilings or walls, and insulated beams
- Sawing, grinding, cutting or other mechanical disturbance
- Removing floor tiles or scraping off flooring adhesives
- Changing ceiling tiles or hitting/disturbing tiles when changing out lighting
- Building demolition or renovation activities
- Removal of surfacing materials or textures
- Cutting holes in ceilings, walls, and/or moving/disturbing insulation or surface treatments when running wiring.
- Disturbance of water pipes (even if no insulation is visible on the visible section of pipe – another section of pipe might contain insulation that is disturbed by the movement).

Don't disturb building materials unless you know for sure that they do not contain asbestos. For more information [contact EHS](#) at 4-0249. If you believe that an activity being conducted in your area is disturbing ACM, ask the worker if they are sure that the material does not contain asbestos, or call EHS for information about your area.

Fire and water can also damage the matrix of building materials that may contain asbestos. Areas should be properly assessed following any damage of building materials.

*If you work with ACM, take precautions not to track fibers back to other parts of the building or home to your family on shoes, clothing, and equipment. Children are more susceptible than adults to respiratory hazardous such as asbestos fibers.*

## YOUR RESPONSIBILITY

<a href="#">New Construction</a>	<a href="#">Demolition/Renovation</a>	<a href="#">Wiring Projects</a>	<a href="#">Important Notice</a>
<a href="#">Earth Work</a>	<a href="#">Maintenance</a>	<a href="#">Custodial</a>	<a href="#">Training</a>

It is the responsibility of all persons on campus to avoid damaging asbestos containing materials (ACM) whenever possible. Do not drill, sand, grind, scrape, break, or conduct any other abrasive or destructive activity on building materials that do, or may contain asbestos. These activities may release asbestos fibers into the air. Unless you have a written report from EHS or State of Colorado-approved asbestos consultant indicating a material does not contain asbestos, you must contact EHS ([Dan Kerley](#) at 303- 724-0249) before altering, removing or otherwise disturbing the matrix of the material. A prudent approach is to consider all building

materials (and [suspect miscellaneous non-building materials](#)) as ACM until the contrary can be documented. If you have a project, or work activity which may disturb building materials, contact EHS for instructions on how to proceed. You should also contact EHS if you notice debris resulting from damage to building systems or other materials you believe might be ACM. EHS will dispatch personnel to the site to assess the situation and take whatever action is necessary to protect public health and the environment.

Additionally, if you will be conducting work activities that involve disturbing soils on the Anschutz Medical Campus (AMC), review the [Earth Work](#) section below. Some areas of AMC may contain buried building materials and related debris that may contain asbestos. The State of Colorado has new regulations governing the management of asbestos contaminated soils.

### **Important Notice**

*To help UCD better manage asbestos materials, the UCD Environmental Health & Safety Department (EHS) is designated as the central repository for documentation related to asbestos on campus (e.g., abatement reports, sampling data, etc.). If you have obtained information regarding the presence or absence of ACM at a campus facility, you must provide a copy (or original) of the sampling or survey data, Report of Findings, or other valid documentation to EHS. This will provide one central point of contact to obtain information on the presence of asbestos on campus.*

The following information is provided to assist staff in determining their responsibilities related to asbestos management at UCD. The guidance provided is not all-inclusive and is offered as a supplement to the procedures and responsibilities outlined in the [University of Colorado Denver Asbestos Control Program](#).

## **Construction Project Managers**

### **New Construction**

The following should be addressed for all new construction projects or significant renovations:

- Ensure that you alert your project architect of the requirement to obtain a certificate of no asbestos. Your project architect must specify that only non-asbestos containing materials be used on UCD projects. At the end of the project, the architect of record must provide UCD with a letter certifying that, to the best of their knowledge, no asbestos containing materials were used in the construction/renovation of the building. *Note that the document must use the term "I certify . . ." and be signed by the engineer or architect of record.*
- If asbestos containing materials must be used in specific applications or conditions, the specific location, type material, quantity of material and the concentration/content and type of asbestos in the product must be documented and provided to EHS. Please contact EHS for information on the type and format of documentation needed.
- If there will be demolition activities as part of your project, review the following section on renovation and demolition.

### **Demolition Work (Renovation Projects)**

The following should be addressed before commencing any project that will disturb asbestos containing building materials (ACBM):

- Involve EHS early in the planning phase to obtain input on anticipated scope of work, scheduling/project timelines, and to assist with consultant selection.
- Conduct an asbestos survey within all potentially affected areas of the building:
  - Asbestos surveys must be conducted by a consultant or UCD staff holding the appropriate State of Colorado certifications (asbestos inspector) and possessing at least one year of on-the-job experience conducting asbestos building surveys.
  - Ensure you receive documentation of the survey results in report form, including independent laboratory sample results and associated chain of custodies. Provide the original or a copy provided to EHS.
- Include stop work order terms within contract wording to ensure contractor will stop work if undocumented asbestos materials are found during demolition.
- Conduct asbestos abatement (proper removal) of all ACBM potentially impacted by building renovation/demolition activities:
  - Depending on the size of the project, a State certified asbestos planner/designer will need to develop an abatement plan that will be executed by the selected Colorado certified asbestos abatement contractor.
  - Include requirement for written or electronic documentation (on punch list for project) to ensure a copy of the removal report is received from your asbestos abatement contractor/consultant at project completion.
  - Ensure appropriate permits are pulled for both the asbestos abatement work and for demolition of a building (two different permits, both obtained through the Colorado Department of Public Health & Environment [CDPHE] air quality section).
  - Involve EHS in pre-construction meeting (it may be helpful to request that EHS attend pre-bid walk-through to help address contractor questions).
- For significant renovations, ensure that you alert your project architect or GC of the requirement to obtain a certificate of “no asbestos” for materials used on the project. If you will be purchasing the materials for the project, ensure that your vendors are provided with the specification that building materials such as floor tiles, ceiling tiles, mastic, roofing materials, and other [suspect materials](#) *must be non-asbestos containing*. Note that while *most* materials manufactured in the U.S. do not contain asbestos, imported materials may contain asbestos.

## Earth Work

Section 5 of the Colorado Department of Public Health and Environment (CDPHE) Regulations Pertaining to Solid Waste Sites and Facilities (Solid Waste Regulations), as put forward in CCR 1007-2, Part 1, now addresses the management of asbestos-contaminated soil.

If you have reason to believe that building debris might be present in soils that will be disturbed by your activities, you must follow the State [regulations](#) and [guidance](#) pertaining to [asbestos in soils](#).

The following should be addressed before any project that has the potential to disturb soil on the Anschutz Medical Campus (e.g., excavations, trenching, pot-holing, geo-drilling, grading activities using heavy equipment, and all other activities that will use mechanical means for disturbing soil deeper than first few inches of soil *in areas that are likely to contain asbestos debris*. **Locations at AMC north of 17<sup>th</sup> Place should be considered “likely” unless assessment activity proves otherwise. All other UCD locations remain unknown and will**

**be considered unlikely unless historic information about past landfill, demolished buildings, etc exists.):**

- Prior to earth work, conduct a site characterization through a State-approved asbestos firm to ensure you are unlikely to encounter asbestos materials, **OR**
- Ensure that you have a State-approved general site-specific workplan or pre-approved site-wide workplan/SOP for disturbance of soil within areas at AMC *likely* to contain asbestos debris.\*
- If earth work will be conducted in an area *likely* to contain asbestos debris, you may contract with a State-approved asbestos inspector to conduct *spotting* during soil-disturbing activities as *an alternative* to conducting a site characterization.
- If a site characterization confirms the presence of asbestos, a site-specific workplan must be submitted to the State and approved **prior to work activity**. You must also submit a [notice of planned work activity](#) (submit at least ten working days prior to planned work activity and after a State approved workplan is in place). The project activities **must** be conducted in accordance with [State Solid Waste regulations \(Section 5\)](#). Asbestos contaminated soils must be controlled on-site, properly disposed and transported in accordance with the site workplan and State regulations.
- Upon unplanned discovery of buried building materials/components (e.g., Transite pipe, pipe insulation, thermal insulation, drywall, roof tiles, etc.) **immediately stop work and contact EHS (303-724-0345 during work hours or emergency dispatch for after hours activities)**. [Notification to the State](#) and development of a workplan specific to the activity and work conditions is required. The spoils pile from the specific activity should be isolated. Do not remove additional material from affected area or move or dispose of the soils associated with the affected area(s).
- Any ACM contaminated soils must be managed and disposed of in accordance with the new regulations.
- When working within confirmed or suspected area, ensure that you have an appropriate workplan, appropriately **trained** contractor, and that all affected campus staff, contractors and subcontractors are aware of the action plan and/or process for stop work when asbestos materials are discovered during soil disturbance activities.
- Plan and budget in advance for the possibility of encountering contaminated soils whenever work will be conducted in an area “likely” to contain asbestos soils.
- In the event of emergency work activities, such as broken water line repair, in areas likely to contain ACM, contact EHS to assist with spotting during the project soils activities.

If your project is **not** in an area suspected or “likely” to contain ACM, proceed normally. However, you should include instructions to contractors to stop work (and contact EHS) if you uncover/encounter any building materials in the soil. EHS will assist with assessing if the materials are suspect for asbestos and collect confirmatory samples of suspect materials.

For additional information on pre-planning, pre-cautions, or notification requirements contact Christina Aguilera (4-0242) or Dan Kerley (4-0249) at EHS.

*\*Facilities Projects is working with a consulting firm and EHS to develop UCD protocol document for review and approval by the Colorado Department of Public Health and Environment (CDPHE). Once completed and approved, the document will specify the locations at AMC that have high or low risk and define specific work precautions for both Projects, Construction Services, and Facility Operations activities – including grounds.*

*Until a new plan is in place, you have the option to use the general Fitzsimons Protocol in conjunction with a site-specific workplan that is developed for the specific work activity and location of your project. This site-specific workplan must still be reviewed and approved by CDPHE. Contact Projects or EHS (303-724-0242) for guidance.*

## **Maintenance**

Anytime your work activity has the potential to disturb asbestos containing building materials, you must:

- Follow requirements outlined in the UCD Asbestos Control Plan
- Have appropriate training or hire contractors with the proper State certifications for the planned work activity (relevant to the size and specifics of the project).
- Employ the appropriate personal protective measures (as the worker) and appropriate containment or fiber release control measures.
- Make certain that work performed by UCD personnel does not exceed the limits requiring full abatement procedures by State-certified asbestos workers and will not require permitting.

Materials that you use or purchase for use in UCD buildings must be non-asbestos containing. Work with purchasing to ensure that your vendors are provided with the specification that building materials such as floor tiles, ceiling tiles, mastic, roofing materials, and other [suspect building materials](#) must be non-asbestos. Note that while *most* materials manufactured in the U.S. do not contain asbestos, imported materials may. *This requirement should not unduly impair your vendors or reduce your vendor options. If you experience complications or need clarification, contact EHS, [Christina Aquilera](#) (303) 724-0242.*

## **Wiring Projects (Electrical/IT/Telecom/Security Systems)**

If you will be contracting or conducting wiring work such as running electrical, telecom lines, alarm systems, etc., you should ensure that affected building materials (including [soils](#)) do not contain asbestos. For repair and simple projects with minimal impact to building materials, you can call EHS for assistance assessing the materials. For large scale projects, it is best to contract to have an asbestos survey conducted if an existing survey report for the area(s) is not already available (contact EHS or Facilities Projects).

UCD employees routinely involved in activities that might damage or disturb building materials must obtain [2-Hour Asbestos Awareness training](#). It is the responsibility of the department contracting outside work services to inform the contractor of any potential to impact ACM. This means that you must know if the project being bid has any potential of damaging or disturbing ACM. Asbestos abatement work may be necessary prior to the work activities, or at minimum, specific work practices must be prescribed to the contractor (depending on the nature of the work activity and potential to impact ACM). Review other sections ([Renovation/demolition](#), [Maintenance](#), [Earth Work](#)) for more information on responsibilities for contracted work and internal maintenance.

## ***Custodial***

All UCD employees with custodian duties must take a [2-Hour Asbestos Awareness Training](#). UCD departments that *contract* cleaning services should ensure that contract terms require that custodial staff conducting work at UCD must have 2-Hour Asbestos Awareness training and have been informed of how to respond to a suspected or actual asbestos fiber release (e.g., water damaged building materials, discovery of building debris on surfaces/floors, otherwise damaged suspect building materials, etc.) and the process for reporting such an event to the UCD EHS department. Both UCD employees and contracted workers must refrain from activities with the potential to damage ACM:

- Using high speed floor stripping, buffing or burnishing machines with >300 rpm
- Using high abrasion pads
- Hitting overhead pipes with ladders, mops, or other equipment
- Nailing or drilling into ACM such as walls and doors
- Affixing materials to ceiling tiles; textured ceilings or walls, and insulated beams
- Sawing, grinding, cutting or other mechanical disturbance
- Removing floor tiles
- Changing ceiling tiles or hitting/disturbing tiles when changing out lighting

## **TRAINING**

For those employees that might come into direct contact with asbestos due to the nature of their work, EHS conducts 2-hour asbestos awareness classes to acquaint staff with:

- the hazards of asbestos exposure,
- proper protective measures,
- what types of materials may contain asbestos,
- the health effects of exposure,
- how asbestos is regulated,

and to answer questions staff have about their potential risks. Training can be arranged by contacting EHS at (303) 724-0345. EHS can also help you find a location to obtain 16-hour Asbestos O&M Training for staff that will be conducting maintenance that will necessitate the removal of small amounts of asbestos materials.

## **Where is Asbestos found?**

More than 3,000 products in use today contain asbestos. Most of these are materials used in heat and acoustic applications, fire proofing, roofing and flooring.

### ***Asbestos may be found in building materials:***

- Sprayed on fire proofing and insulation
- Insulation for pipes and boilers
- Wall and ceiling coatings or textures (including acoustical and fire retardant treatments)
- Ceiling tiles and wall acoustical panels
- Wall and ceiling insulation
- Floor tiles and some flooring sheet goods (much rarer) – including mastics

- Subsurface water pipes (Transite – looks like concrete)
- Transite panels
- Putties, caulks, and cements (such as in chemical carrying cement pipes)
- Roofing materials (e.g., shingles, composites, tar)
- Siding shingles on older residential buildings
- Wall joint compounds and window materials
- Interiors of fire doors
- Old lab bench tops
- Old electrical wiring insulation
- Insulate/vermiculite inside cinder block (added to exterior walls)

Due to regulatory restrictions on its use in the United States, buildings built after approximately 1981 are unlikely to contain ACM. However, imported building materials still may contain asbestos. Additionally, older materials (items that have been warehoused, etc.) may have been used to patch or renovate newer buildings. To be certain, the question should be posed prior to purchasing new material or using older stores of material. Sometimes materials such as mastic and roofing may contain labeling specifying that the material is “asbestos free”.

### ***Non-Building Materials that May Contain Asbestos***

- Brake linings and clutch pads
- Fire blankets
- Old electrical wiring insulation
- Theater curtains
- Old kiln bricks/lining
- Older fire/heat proof gloves
- Welding pads
- Fume hoods (fire proof panels – Transite)
- Insulation on old lighting fixtures
- Vermiculite
- Soils (At AMC, some soils may contain buried asbestos-containing building materials. *Colorado now regulates activities that may disturb soil likely to contain asbestos. Please contact EHS or Facilities Projects for additional information before conducting any earth work.*)

## ***Asbesto - Información en Español***

### **¿Qué es el asbesto?**

El asbesto es una fibra fuerte de minerales que se da en la naturaleza y que es resistente al calor y tiene muchas otras propiedades benéficas. Debido a que las fibras de asbesto son resistentes al calor y a la mayoría de las sustancias químicas, han sido utilizadas como materiales aislantes en muchos edificios residenciales y comerciales en todo el país. Las fibras de asbesto se encuentran en la naturaleza y flotan con facilidad en el aire. Casi todo mundo está expuesto al asbesto en algún momento de su vida.

### **¿Qué cantidad de asbesto causa enfermedades?**

La mayoría de las personas no se enferman del asbesto al que están expuestas. La exposición al asbesto se considera un riesgo a la salud cuando se inhalan altas concentraciones de fibras de asbesto por períodos largos. Las personas que caen enfermas del asbesto casi siempre son aquellas que se exponen al material y trabajan con él todos los días. A medida que aumenta la exposición de la persona a las fibras, ya sea al inhalar más fibras o al respirar fibras durante más tiempo, el riesgo de esa persona a la enfermedad también aumenta. Generalmente se toma de 10 a 40 años para que alguien desarrolle una enfermedad relacionada con el asbesto después de haber estado expuesto. Existen pocas probabilidades de contraer la enfermedad por exponerse a una alta cantidad sólo por un rato o por exponerse durante un período corto a escasas cantidades.

### **¿Cuáles enfermedades son causadas por el asbesto?**

**Asbestosis** — es una enfermedad seria y progresiva que daña los tejidos del pulmón (llamado "cicatrizar"), asociada con la exposición al asbesto por largo plazo. Los síntomas de la enfermedad (como la falta de respiración) pueden controlarse si se recurre a la atención de un médico.

**Cáncer del pulmón** — El asbesto es una de las causas principales de todos los tipos de cáncer del pulmón que afectan a las personas que no fuman. Las personas que fuman que se han expuesto al asbesto tienen niveles extremadamente elevados de esta enfermedad.

**Mesotelioma maligno** — es un raro cáncer progresivo de los tejidos que recubren el pecho o el abdomen para el cual el asbesto y otras fibras parecidas son la única causa conocida.

### **¿Qué se puede hacer para limitar la exposición?**

Para el público en general, el mejor modo de evitar la exposición es el evitar respirar el polvo lo más que sea posible. No sabemos si todo el polvo contiene asbesto. Si hay asbesto en el polvo, es muy probable que la exposición a corto plazo no cause daño.

Los trabajadores que participan en la demolición y el retiro de los escombros en estos desastres deberán usar protección para respirar (un respirador aprobado por NIOSH tal como un N-95 o un respirador más protector). Al usarlos, es esencial que estos respiradores se ajusten apropiadamente a la cara del trabajador. Los trabajadores deberán usar el respirador cuando estén dentro de las zonas demarcadas de trabajo. No se requieren los respiradores en zonas fuera de aquellas demarcadas para el trabajo. Además, los trabajadores pueden tomar ciertas medidas dentro de la zona para reducir el polvo en el aire. Por ejemplo, el humedecer un poco el polvo que se ha sentado con un fino rocío de agua puede reducir bastante la cantidad de polvo que se levante con la actividad. Los trabajadores también deberán mantener puesta su protección respiratoria mientras se quitan las ropas empolvadas, luego deberán bañarse completamente y ponerse ropa limpia antes de irse a casa para evitar llevar el polvo a sus carros u hogares.