

**CAMBRIDGE**

*real estate services*

# **SUSPECT MATERIALS GUIDE**

*Includes Operation and  
Maintenance Plan for:*

**mold and mildew**

**asbestos**

**lead based paint**

# **Lead Based Paint Operations and Maintenance Plan**

# **Cambridge Real Estate Services Guidelines for Renovations and Repairs in Buildings Built Prior to 1978**

Before 1978, many paints contained lead, which is an ingredient that was added to the paint to help speed up drying times, increase the durability and longevity of the finish, and to help resist moisture. In 1978, the US prohibited the addition of lead in household paints due to the associated health risks and its potential for damage to the environment.

Any building built before 1978 has the potential of having paint on interior and exterior walls, door and window casings, ceilings, doors, and windows. Lead paint that has been painted over (encapsulated) with newer, non leaded paint does not pose any health hazards to the occupant, unless the newer coat(s) of paint are disturbed, exposing the lead based paint beneath. Some activities that may expose lead based paint include, but are not limited to:

- Remodeling and repair/maintenance
- Drywall repairs
- Repairs or replacement of windows and doors
- Sanding woodwork
- Siding repairs or replacement
- Ceiling repairs
- Electrical work
- Plumbing
- Painting preparation
- Carpentry

There are many commercially available test kits to determine if the presence of lead exists in a dwelling. See the Cambridge Real Estates Services Specifications List for information on what product to obtain and where it may be purchased from. The property's regional maintenance supervisor can assist the site staff in properly administering the test.

## **Requirements of the Lead-Based Paint Renovation, Repair and Painting Program Rule**

Any activity that disturbs paint in pre-1978 housing and child-occupied facilities must adhere strictly to the Environmental Protection Agency's 2008 Lead-Based Paint Renovation, Repair and Painting Program Rule. When followed, this rule will provide a safe living environment for our residents, as well as a safe working environment for our site staff and vendors. This rule outlines what type of work requires precautions when performing renovations, it dictates who can perform this work, it requires education of residents and owners, and it calls for creating a record of all work performed.

## **Anyone who performs work that disturbs paint in occupied structures built before 1978 must follow the Renovation and Repair guidelines**

### **This includes:**

- Site staff
- General contractors
- Painters
- Plumbers
- Carpenters
- Electricians

Any firm conducting work in units containing lead paint must be certified, and all renovators must be trained in lead paint remediation, per ORS 431.920. Lead-safe work practices must be followed, including work-area containment to prevent dust and debris from leaving the work area.

Certain work practices are prohibited, such as open-flame burning, and the use of power tools without HEPA exhaust control. A thorough clean up followed by a verification procedure to minimize exposure to lead-based paint hazards is required.

It is the responsibility of the site staff to make sure all outside vendors are certified in lead based paint remediation. Your property supervisor or regional maintenance supervisor can assist you in determining if your vendor has this certification. Cambridge's regional maintenance supervisors have certification in lead based paint remediation, and must be contacted when a site employee is to be involved in a repair.

## **Exclusions to the EPA's Lead-Based Paint Renovation, Repair and Painting Program Rule:**

- Housing built in 1978 or later.
- Housing for elderly or disabled persons, unless children under 6 reside or are expected to reside there.
- Zero-bedroom dwellings (studio apartments, dormitories, etc.).
- Housing or components that have been declared lead-free. Such a declaration can be made by a certified inspector or risk assessor.
- Minor repair and maintenance activities that disturb 6 square feet or less of paint per room inside, or 20 square feet or less on the exterior of a home or building. These minor repair and maintenance activities do not include window replacement and projects involving demolition or prohibited practices.

## **Resident and Owner Education:**

Before renovations begin in housing built before 1978, the site staff must do the following:

- Distribute the EPA's lead-safe certified guide to Renovate Right (see Exhibit A) to the occupants of the unit. The Site Employee Resource Center will forward a copy of this brochure to the owner of the property
- In a child-occupied unit, the site staff must distribute the lead pamphlet and renovation notices to parents/guardians of the child or children living in the unit, or post informational signs about the renovation or repair job.
- For work in common areas of multi-family housing, the site staff must either distribute renovation notices to tenants or post informational signs about the renovation or repair job.

Informational signs must be posted where they will be seen; they must describe the nature, locations, and dates of the renovation, and be accompanied by the lead pamphlet or by information on how parents and guardians can get a free copy.

The site staff must obtain confirmation of receipt of the lead pamphlet from the owner and occupants (as applicable), or a have certificate of mailing from the post office. These records must be retained for three years. Pre-renovation education requirements do not apply to emergency renovations.

**In 2010, the EPA authorized the Oregon Construction Contractors Board (CCB) and the Oregon Health Authority (OHA) to administer and enforce the rule instead of EPA.**

- CCB issues the Lead-Based Paint Renovation (LBPR) contractor license or the LBPR license for CCB licensed contractors.
- Non-CCB licensed firms (maintenance workers in multi-family housing, schools, child care facilities, property management companies and property rental owners) are not required to have a LBPR license. They are required to become certified through the OHA.

## **Local Regulations:**

### **Oregon Revised Statutes**

**ORS 431.917** - Defines Lead Poisoning, and explains effects of renovation activities when lead based paint is present. Outlines the Federal government's role in assisting the State to prevent lead poisoning and reduce the hazards of poisoning due to lead based paint.

**ORS 431.918** - *Definitions for ORS 431.920 and 431.922.* Defines "Certification," "Firm," "Lead-based paint," "Lead-based paint activities," and "Renovation"

**ORS 431.920** – Defines Power and Scope of OHA to Regulate Lead-Based Paint Activities

**ORS 431.922** – Prohibits Performance of Lead-Based Paint Activities without Certification

### **Oregon Administrative Rules**

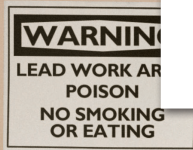
**OAR 333-068** - Accreditation of Training Programs for Professionals Engaged in Lead-Based Paint Activities

**OAR 333-069** - Certification of Individuals and Firms Engaged in Lead-Based Paint Activities

**OAR 333-070** - Pre-Renovation Education and Renovation, Repair, and Painting Activities Involving Lead-Based Paint



# THE LEAD-SAFE CERTIFIED GUIDE TO RENOVATE RIGHT



CAUTION CAUTION CAUTION CAUTION CAUTION CAUTION



1-800-424-LEAD (5323)

[epa.gov/getleadsafe](http://epa.gov/getleadsafe)

EPA-740-K-10-001

Revised September 2011



Important lead hazard information for families, child care providers and schools.



This document may be purchased through the U.S. Government Printing Office online at [bookstore.gpo.gov](http://bookstore.gpo.gov) or by phone (toll-free): 1-866-512-1800.



# IT'S THE LAW!

Federal law requires contractors that disturb painted surfaces in homes, child care facilities and schools built before 1978 to be certified and follow specific work practices to prevent lead contamination. Always ask to see your contractor's certification.

Federal law requires that individuals receive certain information before renovating more than six square feet of painted surfaces in a room for interior projects or more than twenty square feet of painted surfaces for exterior projects or window replacement or demolition in housing, child care facilities and schools built before 1978.

- Homeowners and tenants: renovators must give you this pamphlet before starting work.
- Child care facilities, including preschools and kindergarten classrooms, and the families of children under six years of age that attend those facilities: renovators must provide a copy of this pamphlet to child care facilities and general renovation information to families whose children attend those facilities.



## WHO SHOULD READ THIS PAMPHLET?

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### This pamphlet is for you if you:

- Reside in a home built before 1978.
- Own or operate a child care facility, including preschools and kindergarten classrooms, built before 1978, or
- Have a child under six years of age who attends a child care facility built before 1978.

### You will learn:

- Basic facts about lead and your health.
- How to choose a contractor, if you are a property owner.
- What tenants, and parents/guardians of a child in a child care facility or school should consider.
- How to prepare for the renovation or repair job.
- What to look for during the job and after the job is done.
- Where to get more information about lead.

### This pamphlet is not for:

- **Abatement projects.** Abatement is a set of activities aimed specifically at eliminating lead or lead hazards. EPA has regulations for certification and training of abatement professionals. If your goal is to eliminate lead or lead hazards, contact the National Lead Information Center at **1-800-424-LEAD (5323)** for more information.
- **“Do-it-yourself”** projects. If you plan to do renovation work yourself, this document is a good start, but you will need more information to complete the work safely. Call the National Lead Information Center at **1-800-424-LEAD (5323)** and ask for more information on how to work safely in a home with lead-based paint.
- **Contractor education.** Contractors who want information about working safely with lead should contact the National Lead Information Center at **1-800-424-LEAD (5323)** for information about courses and resources on lead-safe work practices.



## RENOVATING, REPAIRING, OR PAINTING?

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- Is your home, your building, or the child care facility or school your children attend being renovated, repaired, or painted?
- Was your home, your building, or the child care facility or school where your children under six years of age attend built before 1978?

If the answer to these questions is YES, there are a few important things you need to know about lead-based paint.

This pamphlet provides basic facts about lead and information about lead safety when work is being done in your home, your building or the child care facility or school your children attend.

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### The Facts About Lead

- Lead can affect children's brains and developing nervous systems, causing reduced IQ, learning disabilities, and behavioral problems. Lead is also harmful to adults.
  - Lead in dust is the most common way people are exposed to lead. People can also get lead in their bodies from lead in soil or paint chips. Lead dust is often invisible.
  - Lead-based paint was used in more than 38 million homes until it was banned for residential use in 1978.
  - Projects that disturb painted surfaces can create dust and endanger you and your family. Don't let this happen to you. Follow the practices described in this pamphlet to protect you and your family.
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## LEAD AND YOUR HEALTH

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### Lead is especially dangerous to children under six years of age.

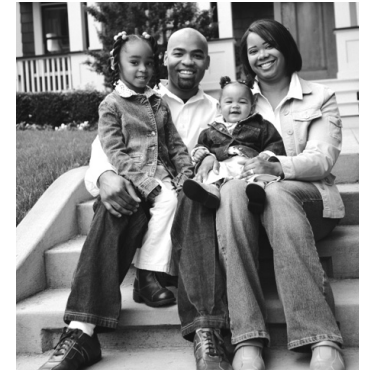
Lead can affect children's brains and developing nervous systems, causing:

- Reduced IQ and learning disabilities.
- Behavior problems.

### Even children who appear healthy can have dangerous levels of lead in their bodies.

Lead is also harmful to adults. In adults, low levels of lead can pose many dangers, including:

- High blood pressure and hypertension.
- Pregnant women exposed to lead can transfer lead to their fetuses. Lead gets into the body when it is swallowed or inhaled.
- People, especially children, can swallow lead dust as they eat, play, and do other normal hand-to-mouth activities.
- People may also breathe in lead dust or fumes if they disturb lead-based paint. People who sand, scrape, burn, brush, blast or otherwise disturb lead-based paint risk unsafe exposure to lead.



### What should I do if I am concerned about my family's exposure to lead?

- A blood test is the only way to find out if you or a family member already has lead poisoning. Call your doctor or local health department to arrange for a blood test.
- Call your local health department for advice on reducing and eliminating exposures to lead inside and outside your home, child care facility or school.
- Always use lead-safe work practices when renovation or repair will disturb painted surfaces.

For more information about the health effects of exposure to lead, visit the EPA lead website at [epa.gov/lead/pubs/leadinfo](http://epa.gov/lead/pubs/leadinfo) or call 1-800-424-LEAD (5323).

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### There are other things you can do to protect your family every day.

- Regularly clean floors, window sills, and other surfaces.
- Wash children's hands, bottles, pacifiers, and toys often.
- Make sure children eat a healthy, nutritious diet consistent with the USDA's dietary guidelines, that helps protect children from the effects of lead.
- Wipe off shoes before entering the house.

## WHERE DOES THE LEAD COME FROM?

### Dust is the main problem.

The most common way to get lead in the body is from dust. Lead dust comes from deteriorating lead-based paint and lead-contaminated soil that gets tracked into your home. This dust may accumulate to unsafe levels. Then, normal hand-to-mouth activities, like playing and eating (especially in young children), move that dust from surfaces like floors and window sills into the body.

### Home renovation creates dust.

Common renovation activities like sanding, cutting, and demolition can create hazardous lead dust and chips.

### Proper work practices protect you from the dust.

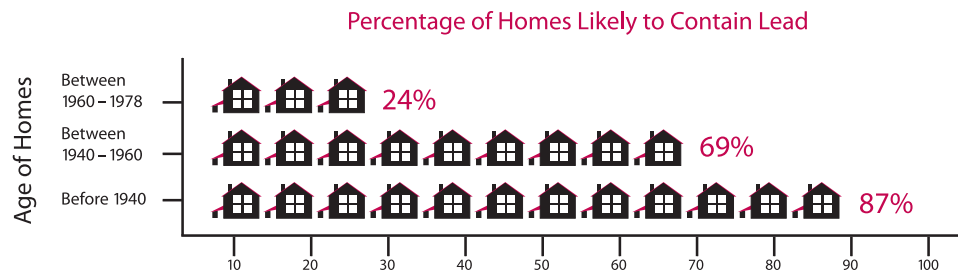
The key to protecting yourself and your family during a renovation, repair or painting job is to use lead-safe work practices such as containing dust inside the work area, using dust-minimizing work methods, and conducting a careful cleanup, as described in this pamphlet.

### Other sources of lead.

Remember, lead can also come from outside soil, your water, or household items (such as lead-glazed pottery and lead crystal). Contact the National Lead Information Center at 1-800-424-LEAD (5323) for more information on these sources.



## CHECKING YOUR HOME FOR LEAD-BASED PAINT



### Older homes, child care facilities, and schools are more likely to contain lead-based paint.

Homes may be single-family homes or apartments. They may be private, government-assisted, or public housing. Schools are preschools and kindergarten classrooms. They may be urban, suburban, or rural.

### You have the following options:

#### You may decide to assume your home, child care facility, or school contains lead.

Especially in older homes and buildings, you may simply want to assume lead-based paint is present and follow the lead-safe work practices described in this brochure during the renovation, repair, or painting job.

#### You can hire a certified professional to check for lead-based paint.

These professionals are certified risk assessors or inspectors, and can determine if your home has lead or lead hazards.

- A certified inspector or risk assessor can conduct an inspection telling you whether your home, or a portion of your home, has lead-based paint and where it is located. This will tell you the areas in your home where lead-safe work practices are needed.
- A certified risk assessor can conduct a risk assessment telling you if your home currently has any lead hazards from lead in paint, dust, or soil. The risk assessor can also tell you what actions to take to address any hazards.
- For help finding a certified risk assessor or inspector, call the National Lead Information Center at 1-800-424-LEAD (5323).

You may also have a certified renovator test the surfaces or components being disturbed for lead by using a lead test kit or by taking paint chip samples and sending them to an EPA-recognized testing laboratory. Test kits must be EPA-recognized and are available at hardware stores. They include detailed instructions for their use.

## FOR PROPERTY OWNERS

### You have the ultimate responsibility for the safety of your family, tenants, or children in your care.

This means properly preparing for the renovation and keeping persons out of the work area (see p. 8). It also means ensuring the contractor uses lead-safe work practices.

Federal law requires that contractors performing renovation, repair and painting projects that disturb painted surfaces in homes, child care facilities, and schools built before 1978 be certified and follow specific work practices to prevent lead contamination.

### Make sure your contractor is certified, and can explain clearly the details of the job and how the contractor will minimize lead hazards during the work.

- You can verify that a contractor is certified by checking EPA's website at [epa.gov/getleadsafe](http://epa.gov/getleadsafe) or by calling the National Lead Information Center at 1-800-424-LEAD (5323). You can also ask to see a copy of the contractor's firm certification.
- Ask if the contractor is trained to perform lead-safe work practices and to see a copy of their training certificate.
- Ask them what lead-safe methods they will use to set up and perform the job in your home, child care facility or school.
- Ask for references from at least three recent jobs involving homes built before 1978, and speak to each personally.

### Always make sure the contract is clear about how the work will be set up, performed, and cleaned.

- Share the results of any previous lead tests with the contractor.
- You should specify in the contract that they follow the work practices described on pages 9 and 10 of this brochure.
- The contract should specify which parts of your home are part of the work area and specify which lead-safe work practices will be used in those areas. Remember, your contractor should confine dust and debris to the work area and should minimize spreading that dust to other areas of the home.
- The contract should also specify that the contractor will clean the work area, verify that it was cleaned adequately, and re-clean it if necessary.

### If you think a worker is not doing what he is supposed to do or is doing something that is unsafe, you should:

- Direct the contractor to comply with regulatory and contract requirements.
- Call your local health or building department, or
- Call EPA's hotline 1-800-424-LEAD (5323).

If your property receives housing assistance from HUD (or a state or local agency that uses HUD funds), you must follow the requirements of HUD's Lead-Safe Housing Rule and the ones described in this pamphlet.

## FOR TENANTS AND FAMILIES OF CHILDREN UNDER SIX YEARS OF AGE IN CHILD CARE FACILITIES AND SCHOOLS

### You play an important role ensuring the ultimate safety of your family.

This means properly preparing for the renovation and staying out of the work area (see p. 8).

Federal law requires that contractors performing renovation, repair and painting projects that disturb painted surfaces in homes built before 1978 and in child care facilities and schools built before 1978, that a child under six years of age visits regularly, to be certified and follow specific work practices to prevent lead contamination.

The law requires anyone hired to renovate, repair, or do painting preparation work on a property built before 1978 to follow the steps described on pages 9 and 10 unless the area where the work will be done contains no lead-based paint.

### If you think a worker is not doing what he is supposed to do or is doing something that is unsafe, you should:

- Contact your landlord.
- Call your local health or building department, or
- Call EPA's hotline 1-800-424-LEAD (5323).

If you are concerned about lead hazards left behind after the job is over, you can check the work yourself (see page 10).





## PREPARING FOR A RENOVATION

### The work areas should not be accessible to occupants while the work occurs.

The rooms or areas where work is being done may need to be blocked off or sealed with plastic sheeting to contain any dust that is generated. Therefore, the contained area may not be available to you until the work in that room or area is complete, cleaned thoroughly, and the containment has been removed. Because you may not have access to some areas during the renovation, you should plan accordingly.

### You may need:

- Alternative bedroom, bathroom, and kitchen arrangements if work is occurring in those areas of your home.
- A safe place for pets because they too can be poisoned by lead and can track lead dust into other areas of the home.
- A separate pathway for the contractor from the work area to the outside in order to bring materials in and out of the home. Ideally, it should not be through the same entrance that your family uses.
- A place to store your furniture. All furniture and belongings may have to be moved from the work area while the work is being done. Items that can't be moved, such as cabinets, should be wrapped in plastic.
- To turn off forced-air heating and air conditioning systems while the work is being done. This prevents dust from spreading through vents from the work area to the rest of your home. Consider how this may affect your living arrangements.

You may even want to move out of your home temporarily while all or part of the work is being done.

Child care facilities and schools may want to consider alternative accommodations for children and access to necessary facilities.



## DURING THE WORK

Federal law requires contractors that are hired to perform renovation, repair and painting projects in homes, child care facilities, and schools built before 1978 that disturb painted surfaces to be certified and follow specific work practices to prevent lead contamination.

The work practices the contractor must follow include these three simple procedures, described below:

**1. Contain the work area.** The area must be contained so that dust and debris do not escape from that area. Warning signs must be put up and plastic or other impermeable material and tape must be used as appropriate to:

- Cover the floors and any furniture that cannot be moved.
- Seal off doors and heating and cooling system vents.
- For exterior renovations, cover the ground and, in some instances, erect vertical containment or equivalent extra precautions in containing the work area.

These work practices will help prevent dust or debris from getting outside the work area.

**2. Avoid renovation methods that generate large amounts of lead-contaminated dust.** Some methods generate so much lead-contaminated dust that their use is prohibited.

They are:

- Open flame burning or torching.
- Sanding, grinding, planing, needle gunning, or blasting with power tools and equipment not equipped with a shroud and HEPA vacuum attachment.
- Using a heat gun at temperatures greater than 1100°F.



There is no way to eliminate dust, but some renovation methods make less dust than others. Contractors may choose to use various methods to minimize dust generation, including using water to mist areas before sanding or scraping; scoring paint before separating components; and prying and pulling apart components instead of breaking them.

**3. Clean up thoroughly.** The work area should be cleaned up daily to keep it as clean as possible. When all the work is done, the area must be cleaned up using special cleaning methods before taking down any plastic that isolates the work area from the rest of the home. The special cleaning methods should include:

- Using a HEPA vacuum to clean up dust and debris on all surfaces, followed by
- Wet wiping and wet mopping with plenty of rinse water.

When the final cleaning is done, look around. There should be no dust, paint chips, or debris in the work area. If you see any dust, paint chips, or debris, the area must be re-cleaned.

## FOR PROPERTY OWNERS: AFTER THE WORK IS DONE

When all the work is finished, you will want to know if your home, child care facility, or school where children under six attend has been cleaned up properly.

### EPA Requires Cleaning Verification.

In addition to using allowable work practices and working in a lead-safe manner, EPA's RRP rule requires contractors to follow a specific cleaning protocol. The protocol requires the contractor to use disposable cleaning cloths to wipe the floor and other surfaces of the work area and compare these cloths to an EPA-provided cleaning verification card to determine if the work area was adequately cleaned. EPA research has shown that following the use of lead-safe work practices with the cleaning verification protocol will effectively reduce lead-dust hazards.

### Lead-Dust Testing.

EPA believes that if you use a certified and trained renovation contractor who follows the LRRP rule by using lead-safe work practices and the cleaning protocol after the job is finished, lead-dust hazards will be effectively reduced. If, however, you are interested in having lead-dust testing done at the completion of your job, outlined below is some helpful information.

#### What is a lead-dust test?

- Lead-dust tests are wipe samples sent to a laboratory for analysis. You will get a report specifying the levels of lead found after your specific job.

#### How and when should I ask my contractor about lead-dust testing?

- Contractors are not required by EPA to conduct lead-dust testing. However, if you want testing, EPA recommends testing be conducted by a lead professional. To locate a lead professional who will perform an evaluation near you, visit EPA's website at [epa.gov/lead/pubs/locate](http://epa.gov/lead/pubs/locate) or contact the National Lead Information Center at **1-800-424-LEAD (5323)**.
- If you decide that you want lead-dust testing, it is a good idea to specify in your contract, before the start of the job, that a lead-dust test is to be done for your job and who will do the testing, as well as whether re-cleaning will be required based on the results of the test.
- You may do the testing yourself. If you choose to do the testing, some EPA-recognized lead laboratories will send you a kit that allows you to collect samples and send them back to the laboratory for analysis. Contact the National Lead Information Center for lists of EPA-recognized testing laboratories.



## FOR ADDITIONAL INFORMATION

You may need additional information on how to protect yourself and your children while a job is going on in your home, your building, or child care facility.

The National Lead Information Center at **1-800-424-LEAD (5323)** or [epa.gov/lead/nlic](http://epa.gov/lead/nlic) can tell you how to contact your state, local, and/or tribal programs or get general information about lead poisoning prevention.

- State and tribal lead poisoning prevention or environmental protection programs can provide information about lead regulations and potential sources of financial aid for reducing lead hazards. If your state or local government has requirements more stringent than those described in this pamphlet, you must follow those requirements.
- Local building code officials can tell you the regulations that apply to the renovation work that you are planning.
- State, county, and local health departments can provide information about local programs, including assistance for lead-poisoned children and advice on ways to get your home checked for lead.



The National Lead Information Center can also provide a variety of resource materials, including the following guides to lead-safe work practices. Many of these materials are also available at [epa.gov/lead/pubs/brochure](http://epa.gov/lead/pubs/brochure)

- Steps to Lead Safe Renovation, Repair and Painting.
- Protect Your Family from Lead in Your Home
- Lead in Your Home: A Parent's Reference Guide



For the hearing impaired, call the Federal Information Relay Service at 1-800-877-8339 to access any of the phone numbers in this brochure.

## EPA CONTACTS

### EPA Regional Offices

EPA addresses residential lead hazards through several different regulations. EPA requires training and certification for conducting abatement and renovations, education about hazards associated with renovations, disclosure about known lead paint and lead hazards in housing, and sets lead-paint hazard standards.

Your Regional EPA Office can provide further information regarding lead safety and lead protection programs at [epa.gov/lead](http://epa.gov/lead).

#### Region 1

(Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont)  
Regional Lead Contact  
U.S. EPA Region 1  
Suite 1100  
One Congress Street  
Boston, MA 02114-2023  
(888) 372-7341

#### Region 2

(New Jersey, New York, Puerto Rico, Virgin Islands)  
Regional Lead Contact  
U.S. EPA Region 2  
2890 Woodbridge Avenue  
Building 205, Mail Stop 225  
Edison, NJ 08837-3679  
(732) 321-6671

#### Region 3

(Delaware, Maryland, Pennsylvania, Virginia, Washington, DC, West Virginia)  
Regional Lead Contact  
U.S. EPA Region 3  
1650 Arch Street  
Philadelphia, PA  
19103-2029  
(215) 814-5000

#### Region 4

(Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee)  
Regional Lead Contact  
U.S. EPA Region 4  
61 Forsyth Street, SW  
Atlanta, GA 30303-8960  
(404) 562-9900

#### Region 5

(Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin)  
Regional Lead Contact  
U.S. EPA Region 5  
77 West Jackson Boulevard  
Chicago, IL 60604-3507  
(312) 886-6003

#### Region 6

(Arkansas, Louisiana, New Mexico, Oklahoma, Texas)  
Regional Lead Contact  
U.S. EPA Region 6  
1445 Ross Avenue,  
12th Floor  
Dallas, TX 75202-2733  
(214) 665-7577

#### Region 7

(Iowa, Kansas, Missouri, Nebraska)  
Regional Lead Contact  
U.S. EPA Region 7  
901 N. 5th Street  
Kansas City, KS 66101  
(913) 551-7003

#### Region 8

(Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming)  
Regional Lead Contact  
U.S. EPA Region 8  
1595 Wynkoop Street  
Denver, CO 80202  
(303) 312-6312

#### Region 9

(Arizona, California, Hawaii, Nevada)  
Regional Lead Contact  
U.S. Region 9  
75 Hawthorne Street  
San Francisco, CA 94105  
(415) 947-8021

#### Region 10

(Alaska, Idaho, Oregon, Washington)  
Regional Lead Contact  
U.S. EPA Region 10  
1200 Sixth Avenue  
Seattle, WA 98101-1128  
(206) 553-1200

## OTHER FEDERAL AGENCIES

### CPSC

The Consumer Product Safety Commission (CPSC) protects the public from the unreasonable risk of injury or death from 15,000 types of consumer products under the agency's jurisdiction. CPSC warns the public and private sectors to reduce exposure to lead and increase consumer awareness. Contact CPSC for further information regarding regulations and consumer product safety.

### CPSC

4330 East West Highway  
Bethesda, MD 20814  
Hotline 1-(800) 638-2772  
[cpsc.gov](http://cpsc.gov)

### CDC Childhood Lead Poisoning Prevention Branch

The Centers for Disease Control and Prevention (CDC) assists state and local childhood lead poisoning prevention programs to provide a scientific basis for policy decisions, and to ensure that health issues are addressed in decisions about housing and the environment. Contact CDC Childhood Lead Poisoning Prevention Program for additional materials and links on the topic of lead.

### CDC Childhood Lead Poisoning Prevention Branch

4770 Buford Highway, MS F-40  
Atlanta, GA 30341  
(770) 488-3300  
[cdc.gov/nceh/lead](http://cdc.gov/nceh/lead)

### HUD Office of Healthy Homes and Lead Hazard Control

The Department of Housing and Urban Development (HUD) provides funds to state and local governments to develop cost-effective ways to reduce lead-based paint hazards in America's privately-owned low-income housing. In addition, the office enforces the rule on disclosure of known lead paint and lead hazards in housing, and HUD's lead safety regulations in HUD-assisted housing, provides public outreach and technical assistance, and conducts technical studies to help protect children and their families from health and safety hazards in the home. Contact the HUD Office of Healthy Homes and Lead Hazard Control for information on lead regulations, outreach efforts, and lead hazard control research and outreach grant programs.

### U.S. Department of Housing and Urban Development

Office of Healthy Homes and Lead Hazard Control  
451 Seventh Street, SW, Room 8236  
Washington, DC 20410-3000  
HUD's Lead Regulations Hotline  
(202) 402-7698  
[hud.gov/offices/lead/](http://hud.gov/offices/lead/)



## SAMPLE PRE-RENOVATION FORM

This sample form may be used by renovation firms to document compliance with the Federal pre-renovation education and renovation, repair, and painting regulations.

### Occupant Confirmation

Pamphlet Receipt

- I have received a copy of the lead hazard information pamphlet informing me of the potential risk of the lead hazard exposure from renovation activity to be performed in my dwelling unit. I received this pamphlet before the work began.

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Printed Name of Owner-occupant

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Signature of Owner-occupant

Signature Date

### Renovator's Self Certification Option (for tenant-occupied dwellings only)

Instructions to Renovator: If the lead hazard information pamphlet was delivered but a tenant signature was not obtainable, you may check the appropriate box below.

- Declined** – I certify that I have made a good faith effort to deliver the lead hazard information pamphlet to the rental dwelling unit listed below at the date and time indicated and that the occupant declined to sign the confirmation of receipt. I further certify that I have left a copy of the pamphlet at the unit with the occupant.
- Unavailable for signature** – I certify that I have made a good faith effort to deliver the lead hazard information pamphlet to the rental dwelling unit listed below and that the occupant was unavailable to sign the confirmation of receipt. I further certify that I have left a copy of the pamphlet at the unit by sliding it under the door or by (fill in how pamphlet was left).

---

Printed Name of Person Certifying Delivery

Attempted Delivery Date

---

Signature of Person Certifying Lead Pamphlet Delivery

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Unit Address

**Note Regarding Mailing Option** — As an alternative to delivery in person, you may mail the lead hazard information pamphlet to the owner and/or tenant. Pamphlet must be mailed at least seven days before renovation. Mailing must be documented by a certificate of mailing from the post office.



Guidelines for Assessment and Remediation  
of Fungal Contamination

**CAMBRIDGE**

*r e a l e s t a t e s e r v i c e s*

## Introduction

Mold, also referred to as mildew or fungus, is found throughout the environment. Mold growth may be caused by a leaking roof, pipe leaks, sewage backups, floods, high humidity, heating, leaks in air conditioning and ventilation systems, construction design defects in the building envelope and water-damaged building materials.

In the residential environment, molds can be found growing in wallboards, carpets, ceiling tiles, books and papers, plywood, wooden studs, and wooden furnishings. As long as moisture is present, molds will grow; without moisture, molds cannot reproduce.

Many molds and mildews are quite common and have no adverse health effects. A few species of molds however, if present in a large enough quantity, may have the potential to cause adverse health effects in certain susceptible individuals.

### **The conditions necessary for mold growth to occur on surfaces are:**

- Moisture
- Temperature range between 40-100 degrees Fahrenheit
- Mold spores
- Nutrient base – Something the organism can metabolize, such as cellulose in wood, paper and ceiling tiles, or dirt in carpets and hidden areas.

The purpose of these guidelines is to establish procedures for addressing mold or mildew reported or observed at a property. Some of the material in these guidelines is taken from the Environmental Protection Agency and the Center for Disease Control. Please read in full the procedures, forms and related documentation contained in these guidelines.

## **ADDRESSING MOLD RELATED ISSUES**

Mold requires a water source and prefers a dark, stagnant environment. Therefore, should a resident notify you of water intrusion, remove the existing water as quickly as possible, schedule repairs, and supply the resident with a dehumidifier. The use of ceiling fans, if available, and lower air conditioning temperatures are also highly recommended. All molds, should they be left untreated and allowed to grow, may cause health concerns for individuals suffering from allergies to mold, have immune deficiencies or sinus conditions. Our goal is to remediate all issues involving mold, and therefore reduce the health concerns of our residents.

**Use the following guidelines when addressing mold or mildew reported or observed at a property.**

### **At the Office:**

1. Fill out a Maintenance Request form and in doing so record the observations of the resident regarding the presence of conditions that may be favorable to mold growth, or whether the resident believes mold growth is present. If a health concern is reported, immediately contact your Property Supervisor and submit an Incident Report to the Central Office. If the resident has had the mold tested, send a copy of the test results to the Property Supervisor.
2. Treat the service request as a priority.
3. Begin to complete the Mold and Mildew Tracking Log to reflect the Maintenance Request. Maintain the Log in the management office.

### **At the Service Location:**

1. Determine the nature and extent of conditions favorable for mold growth, or mold, if any. Determine the source of any water infiltration or excessive moisture, both interior and exterior.
2. If a source of water or excessive moisture is found, stop the leak or cause of excessive moisture and completely dry out all affected areas immediately, or within 24 hours of notification. Consult the procedures for drying out surfaces in the remediation section of these guidelines.
3. If no mold is found, send a Mold and Mildew Resident Follow-up Letter and indicate the results of the investigation.
4. If mold is found, consult the procedures for drying out surfaces in the remediation section of these guidelines.
5. Use the Maintenance Request form or the Mold and Mildew Resident Follow-up Letter to inform the resident of the corrective action completed and additional steps to be taken, if any.

### **Back at the Office:**

1. Before determining that the remediation will require the use of outside professionals or that a unit be vacated, consult the appropriate Property Supervisor.
2. Complete the Mold and Mildew Tracking Log to reflect what action was taken.

### **Within 7 – 10 days:**

1. Send a Mold and Mildew Follow-up Letter.
2. Log the follow-up action on the Mold and Mildew Tracking Log.

**COMPLETE EVERY STEP OF THESE GUIDELINES WHEN POSSIBLE.**

## **Inspecting and Remediating Mold or Mildew**

### **Inspection Procedures**

A visual inspection is the first step in identifying the extent of moisture damage, which may create conditions favorable for mold growth. To the maximum extent possible ceiling tiles, gypsum wallboard, cardboard, duct line, wood, carpet, paper, and other cellulose surfaces should be given careful attention during a visual inspection. Kitchens, bathrooms, windows and HVAC systems should be scrutinized for a possible mold and mildew problem. Ceiling tiles, gypsum wallboard, cardboard, duct liner, wood, carpet, paper, and other cellulose surfaces should be given careful attention during a visual inspection.

An earthy or musty odor may also indicate that mold is present. The use of a moisture meter, to measure the saturation in building materials, is useful in evaluating the extent of water damage and determining when the appropriate moisture level has been restored. Under further investigation, it may be necessary to look inside of wall cavities of filter areas to determine the extent of any water damage or mold growth.

Once mold growth is observed, the extent of any damaged area should be evaluated in order to determine appropriate remedial strategies based on EPA guidance.

### **Remediation Procedures**

Once mold is identified, it is essential to identify and correct the underlying source of water intrusion. Otherwise, mold growth will recur. Generally speaking, if mold is either seen or smelled, it should be remediated. Thus, a visual inspection is the first step to assessing a mold service request. According to the EPA guidelines, it is not essential to identify the types of mold (i.e. test) to remediate the situation. Under certain circumstances, however, it may be important to have building materials/air tested to determine the type of mold present. Consult with the appropriate regional maintenance manager before proceeding with any testing.

If extensive (i.e., the total surface area of visible mold is greater than 100 square feet or the potential for increased resident or remediator exposure during remediation is estimated to be significant), it is important to consult the appropriate regional maintenance manager.

### **Sampling and Testing**

Sampling and testing are to proceed only upon the approval of the appropriate Property Supervisor and regional maintenance manager.



## Bulk Sampling

- Bulk or surface sampling involves taking a sample of material and performing laboratory analysis. Sampling and testing are not a prerequisite to remediation.
- Bulk or surface samples may need to be collected to identify the type of mold if occupants are experiencing symptoms which may be related to mold exposure or to identify the presence or absence of mold if a visual inspection is inconclusive (e.g., discoloration or staining).
- Bulk sampling is to proceed only upon the approval of the appropriate Property Supervisor.

## Air Sampling

- Air sampling may be utilized if the presence of mold is suspected (e.g., musty odors) but cannot be identified through visual inspection.
- Any air sampling must also include an exterior air sample as a baseline sample for the ambient environmental level of mold.
- If air sampling is conducted, personnel conducting the sampling must be trained in proper air sampling methods.

## General Clean up Procedures

In all situations, the underlying cause of water accumulation must be fixed or the problem may recur. A prompt response (within 24 to 48 hours) and thorough clean up, drying and/or removal of water damaged materials will prevent or limit mold growth.

The EPA has delineated three levels of remediation, based on the total area of material affected by visible mold growth. Consult Clean Up and Mold (Table 1) and the following procedures, which are applicable to the Level I and Level II remediation procedures described above:

- Wear rubber gloves or vinyl gloves when handling moldy materials.
- Wear appropriate clothing and shoes, including eye protection; during clean-up of the area.
- Turn off all HVAC equipment.
- Exercise caution around any electrical equipment or fixtures.
- Make sure the area is well ventilated at all times during the removal process. Do not fan an area where mold is present or suspected.
- Read and follow the instructions and safety data sheets (MSDS) of all chemicals used.
- Wipe all surfaces with a non-ammonia soap or detergent in hot water to remove all loose mold.
- Use a stiff brush or cleaning pad on all uneven surfaces with detergent.
- At completion, rinse all surfaces clean with water. Use a wet/dry vacuum if necessary.
- Spray or wipe to disinfect the area with a mildewcide or virucide.
- Never mix ammonia with bleach.
- Let dry overnight.
- Remove and discard all porous or cellulose materials (e.g., wallboard) that appear to have mold on them. Contaminated absorbent material should be sealed in plastic sheets. Tape the plastic sheets closed before removing from the area.
- HEPA vacuum clean the entire work area at completion. (HEPA vacuums are available at The Home Depot or similar hardware/home center type stores.)
- Wipe clean all surfaces in the work area at completion of the cleaning and removal process.
- Wash hands thoroughly and HEPA vacuum all clothes during any break and at completion of the clean-up project.

The following equipment is available at most supply stores, such as Home Depot, and is useful to have on site to deal with water intrusion and/or mold remediation:

- Moisture meter
- High efficiency particulate air (HEPA) filtered vacuum cleaner
- Disinfectant or bleach and standard cleaning detergent
- Wet vacuum
- Blowers (have on site or know where to rent)
- Dehumidifiers (have on site or know where to rent)
- Localized containment bag (2-glove bags)
- Disposable clothing (1 box)
- N-95 disposable respirators (5 pack)
- 6-mil disposable bags (1 box)
- 6-mil polyethylene sheeting (2 rolls)
- Yellow caution tape (3 rolls)
- Plastic spray cleaning bottles
- Disposable scrub brush, sponges and cloths

## Clean up and Mold (Table 1) Water Damage

Clean up and Mold Prevention Guidelines for Response to Clean Water Damage within 24-48 hours to prevent mold growth\*

Water Damaged Material*	Actions
Books and papers	<ul style="list-style-type: none"> <li>• For non-valuable items, discard books and papers.</li> <li>• Photocopy valuable /important items, discard originals.</li> <li>• Freeze (in frost-free freezer) or freeze-dry.</li> </ul>
Carpet and backing – Dry within 24-48 hours	<ul style="list-style-type: none"> <li>• Remove water with water extraction vacuum.</li> <li>• Reduce ambient humidity levels with dehumidifier.</li> <li>• Accelerate drying process with fans.</li> </ul>
Ceiling Tiles	Discard and replace.
Cellulose insulation	Discard and replace.
Concrete or cinder block surfaces	<ul style="list-style-type: none"> <li>• Remove water with water extraction vacuum.</li> <li>• Accelerate drying process with dehumidifiers, fans, and/or heaters.</li> </ul>
Fiberglass insulation	Discard and replace.
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	<ul style="list-style-type: none"> <li>• Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary.</li> <li>• Check to make sure under flooring is dry; dry under flooring if necessary.</li> </ul>
Non-porous, hard surfaces (plastic, metals)	Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary.
Upholstered furniture	<ul style="list-style-type: none"> <li>• Remove water with water extraction vacuum.</li> <li>• Accelerate drying process with dehumidifiers, fans, and/or heaters.</li> <li>• May be difficult to completely dry within 48 hours. If the piece is valuable, you may wish to consult a restoration/water damage professional who specialized in furniture.</li> </ul>
Wallboard (drywall and gypsum board)	<ul style="list-style-type: none"> <li>• May be dried in place if there is no obvious swelling and the seams are intact. If not, remove, discard, and replace.</li> <li>• Ventilate the wall cavity, if possible.</li> </ul>
Window drapes	Follow laundering or cleaning instructions recommended by the manufacturer.
Wood surfaces	<ul style="list-style-type: none"> <li>• Remove moisture immediately and use dehumidifiers, gentle heat, and fans for drying (use caution when applying heat to hardwood floors).</li> <li>• Treated or finished wood surfaces may be cleaned with mild detergent and clean water and allowed to dry.</li> <li>• Wet paneling should be pried away from wall for drying.</li> </ul>
<p>If mold growth has occurred or materials have been wet for more than 48 hours, consult Table 2 guidelines. Even if materials are dried within 48 hours, mold growth may have occurred. Items may be tested by professionals if there is doubt. Note that mold growth will not always occur after 48 hours; this is only a guideline.</p>	

These guidelines are for damage caused by clean water. If you know or suspect that the water source is contaminated with sewage, chemical, or biological pollutants, then Personal Protective Equipment and containment are required by OSHA. An experienced professional should be consulted if you and/or your remediators do not have expertise remediating in contaminated water situations. Do not use fans before determining that the water is clean or sanitary.

\*If a particular item(s) has high monetary or sentimental value, you may wish to consult a restoration/water damage specialist.

The subfloor under the carpet or other flooring material must be cleaned and dried. See the appropriate section of this table for recommended actions depending on the composition of the subfloor.

## Clean Up and Mold (Table 2) Remediation Guidelines

Use professional judgment to determine prudent levels of Personal Protective Equipment and containment for each situation, particularly as the remediation site size increases and the potential for exposure and health effects rises. Assess the need for increased Personal Protective Equipment, if during the remediation; more extensive contamination is encountered than was expected. Consult Table 1 if materials have been wet for less than 48 hours, and mold growth is not apparent.

These guidelines are for damage caused by clean water. If you know or suspect that the water source is contaminated with sewage, or chemical or biological pollutants, then the Occupational Safety and Health Administration (OSHA) requires PPE and containment. An experienced professional should be consulted.

Select the method most appropriate to the situation. Since molds gradually destroy the things they grown on, if mold growth is not addressed promptly, some items may be damaged such that cleaning will not restore their original appearance. If mold growth is heavy and items are valuable or important, you may wish to consult a restoration/water damage/remediation expert. Please note that these are guidelines; other cleaning methods may be preferred by some professionals.

### CLEAN UP METHODS

Method 1: Wet vacuum (in the case of porous materials, some mold spores/fragments will remain in the material but will not grow if the material is completely dried. Steam cleaning may be an alternative for carpets and some upholstered furniture.

Method 2: Damp wipe surfaces with plain water or with water and detergent solution (except wood-use wood floor cleaner); scrub as needed.

Method 3: High-efficiency particulate air (HEPA) vacuum after the material has been thoroughly dried. Dispose of the contents of the HEPA vacuum in well-sealed plastic bags.

Method 4: Discard – remove water-damaged materials and seal in plastic bags while inside of containment, if present. Dispose of as normal waste.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Minimum: Gloves, N-95 respirator, goggles/eye protection

Limited: Gloves, N-95 respirator or half-face respirator with HEPA filter, disposable overalls, goggle/eye protection

Full: Gloves, disposable full body clothing, head gear, foot coverings, full-face respirator with HEPA filter

### CONTAINMENT

Limited: Install polyethylene sheeting from ceiling to floor around affected area with a slit entry and covering flap; maintain area under negative pressure with HEPA filtered fan unit. Block supply and return air vents within containment area.

Full: Use two layers of fire-retardant polyethylene sheeting with a one-airlock chamber. Maintain area under negative pressure with HEPA filtered fan exhausted outside of building. Block supply and return air vents within containment area.

Table developed from literature and remediation documents including Bioaerosols: Assessment and Control (American Conference of Governmental Industrial Hygienist, 1999) and IICRC S500, Standard and Reference Guide for Professional Water Damage Restoration. (Institute of Inspections, Cleaning and Restoration, 1999); see Resources List for more information.

Material or Furnishing Affected	Clean Up Methods	Personal Protective Equipment (PPE)	Containment
<b>SMALL – Total Surface Area Affected Less Than 10 sq. ft.</b>			
Books and papers	3	Minimum N-95 respirator, gloves, and goggles	None Required
Carpet and backing	1, 3	Same as above	None
Concrete/cinder block	1, 3	Same as above	None
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1, 2, 3	Same as above	None
Non-porous, hard surfaces (plastics, metals)	1, 2, 3	Same as above	None
Upholstered furniture & drapes	1, 3	Same as above	None
Wallboard (drywall and gypsum board)	3	Same as above	None
Wood surfaces	1, 2, 3	Same as above	None
<b>MEDIUM – Total Surface Area Affected Between 10-100 sq. ft.</b>			
Books and papers	3	Limited or Full – Use professional judgment, consider potential for remediator exposure and size of contaminated area.	Limited – Use professional judgment, consider potential for remediator/occupant exposure and size of contaminated area.
Carpet and backing	1, 3, 4	Same as above	Same as above
Concrete or cinder block	1, 3	Same as above	Same as above
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1, 2, 3	Same as above	Same as above
Non-porous, hard surfaces (plastics, metals)	1, 2, 3	Same as above	Same as above
Upholstered furniture & drapes	1, 3, 4	Same as above	Same as above
Wallboard (drywall and gypsum board)	3, 4	Same as above	Same as above
Wood surfaces	1, 2, 3	Same as above	Same as above
Material or Furnishing Affected	Clean Up Methods	Personal Protective Equipment (PPE)	Containment



**LARGE – Total Surface Area Affected Greater than 100 sq. ft. or Potential for Increased Occupant or Remediator Exposure During Remediation Estimated to be Significant**

Books and papers	3	Full Use professional judgment, consider potential for remediator exposure and size of contaminated area.	Full Use professional judgment, consider potential for remediator/occupant exposure and size of contaminated area
Carpet and backing	1, 3, 4	Same as above	None
Concrete/cinder block	1, 2, 3, 4	Same as above	None
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1, 2, 3, 4	Same as above	None
Non-porous, hard surfaces (plastics, metals)	1, 2, 3	Same as above	None
Upholstered furniture & drapes	1, 3, 4	Same as above	None
Wallboard (drywall and gypsum board)	3, 4	Same as above	None
Wood surfaces	1, 2, 3	Same as above	None

## **Communicating Mold Issues to Residents**

Residents may have questions or concerns regarding mold intrusion and remediation given the current media attention to this issue. In addition to the items below, should they wish to learn more about this subject, please refer them to the Environmental Protection Agency or Center for Disease Control websites.

1. A Mold and Mildew Addendum is to be signed by all new residents.
2. Keep residents informed with respect to repair and remediation issues.
3. If a condition is hazardous to a resident's health or if needed repairs pose a danger to residents, contact the appropriate Property Supervisor and Regional Maintenance Manager.

## **RESOURCES LIST**

### **Center for Disease Control and Prevention (CDC)**

(800) 311-3435 Information on health-related topics including asthma, molds in the environment, and occupational health.

### **CDC's National Center for Environmental Health (NCEH)**

(888) 232-6789 "Questions and answers on Stachbotrys chartarum and other molds".

### **Occupational Safety & Health Administration (OSHA)**

(800) 321-OSHA (800-321-6742)

[www.osha.gov](http://www.osha.gov) - Information on worker safety; includes topics such as respirator use and safety in the workplace.



# **Operations and Maintenance Plan for:**

## ***Asbestos Containing Materials***



# CONTENTS

CONTENTS .....	1
I. INTRODUCTION.....	1
II. POLICY STATEMENT.....	1
III. PROGRAM PARTICIPANTS.....	1
III. PROGRAM PARTICIPANTS.....	2
IV. LOCATION OF ACM.....	3
V. APPROPRIATE WORK PRACTICES .....	4
VI. RENOVATION/REMODELING OF NON-INSPECTED AREAS .....	6
VII. NOTIFICATION PROGRAM RESPONSIBILITIES .....	6
VIII. INSPECTION PROGRAM.....	6
IX. EMPLOYEE PROTECTION .....	7
X. RESPIRATOR PROGRAM.....	8
XI. DEFINITIONS .....	8

Exhibit A - ACM Inspection Form

## **I. INTRODUCTION**

This Operations and Maintenance (O&M) Program addresses activities which may involve or disturb asbestos-containing materials (ACM). See section IV for ACM type and locations.

An O&M Program minimizes the potential for facility employees, tenants, maintenance personnel, contractors/vendors and the general public to be exposed to asbestos-containing materials or airborne asbestos fibers. Asbestos is a naturally occurring mineral silicate whose fiber-like particles are known to cause mesothelioma, asbestosis and lung cancer. Through the development and implementation of a procedural manual for company associates outlining the necessary procedures for emergency situations, associate training, periodic inspections, testing and record keeping, an O&M program can meet the needs of the facility in the management of asbestos-containing materials.

The O&M program, when implemented, provides a level of assurance that the most prudent steps are being taken to minimize, and in some instances eliminate, the potential for asbestos exposure for facility employees, tenants, maintenance personnel, vendors and the general public. Through this directive the O&M program becomes a document that provides evidence of the corporation's awareness of the liabilities and outlines the necessary steps to minimize exposure potential.

## **II. POLICY STATEMENT**

It is the policy of the property owner, to notify appropriate persons as required by law and to take necessary steps to minimize the potential for asbestos exposure.

It is the policy of the property owner, that only trained, qualified individuals, with prior authorization from the property owner, shall disturb or remove any ACM.

It is the policy of the property owner, that maintenance/custodial staff shall receive appropriate O&M training, as deemed necessary.

## **III. PROGRAM PARTICIPANTS**

The Asset Manager for this Facility is:

Company Name: >  
Contact Person: >  
Address: >  
Telephone: >

The Management Company for this Facility is:

Company Name: >  
Contact Person: >  
Address: >  
Telephone: >

### **III. PROGRAM PARTICIPANTS**

In order to ensure that all asbestos-containing materials are handled properly, the Asset Manager and Management Companies are responsible for compliance with the provisions of this plan as described below.

#### **INDIVIDUAL RESPONSIBILITIES**

##### **Asset Manager**

- The Asset Manager shall be responsible for the following tasks:
- Act as a liaison between the property owner and the Management Company handling the property and be a conduit for information dissemination.
- Review all planned construction and maintenance activities in areas known to have asbestos-containing materials, to prevent unnecessary damage to the material, occupant exposure and contamination of the building.
- Monitor the above work while it is in progress to ensure that it complies with contract specifications.
- Review materials or products before they are used or purchased locally (those not on schedule or not in supply) to ensure that they are asbestos-free.
- Ensure that only authorized persons repair, replace or handle asbestos-containing materials within their facility.
- Maintain an on-site record of O&M Program inspection reports as received.
- Report all damage to asbestos-containing materials immediately to the O&M Program Manager.
- Direct all unauthorized personnel to remain clear of asbestos-containing materials.
- Coordinate the response to all inquiries relative to asbestos through the O&M Program Manager.

## **Management Company**

- The Management Company shall be responsible for the following tasks:
- Ensure that only authorized persons repair, replace or handle asbestos-containing materials within their facility.
- Maintain an on-site record of O&M Program inspection reports as received.
- Report all damage to asbestos-containing materials immediately to the O&M Program Manager.
- Direct all unauthorized personnel to remain clear of asbestos-containing materials.
- Review all planned construction and maintenance activities in areas known to have asbestos-containing materials, to prevent unnecessary damage to the material, occupant exposure and contamination of the building.
- Retain a qualified consultant to monitor the asbestos related work while it is in progress to ensure that it complies with contract specifications.
- Review materials or products before they are used or purchased locally (those not on schedule or not in supply) to ensure that they are asbestos-free.
- Report and coordinate all asbestos-related issues through the O&M Program Manager.
- Coordinate the response to all inquiries relative to asbestos through the O&M Program Manager.
- Ensure that a record is kept and that the property owner, are informed of all applicable incidents, situations or accidents involving asbestos-containing materials.

## **IV. LOCATION OF ACM**

Based upon field surveys and a review of available facility design documents, the following have been determined to have asbestos-containing materials on the premises. A summary of the asbestos-containing materials follows:

ASBESTOS-CONTAINING MATERIALS	LOCATION
>	>

Note: There may be supplemental information (reports, addendum, etc.) which may alter the table above. If so, these supplemental documents must be maintained with this O&M Manual.

Incorporate into the O&M Program all materials (throughout the facility) similar in appearance to those listed above.

No known or suspect ACM shall be disturbed or involved in any work, in any way, prior to laboratory analysis for asbestos content.

## V. APPROPRIATE WORK PRACTICES

### A. Bituminous Roof Mastic Materials

#### General Description

Asbestos containing roof sealant material is commonly used to seal roof membrane joints and patches and at roof penetrations such as vent pipes. This material is a gummy bituminous low-friable material. This material is unlikely to pose a health threat if left undisturbed and should be monitored for damage.

Under normal conditions of use, asbestos fibers are bound into the matrix of the material and pose little or no hazard to building occupants. Mechanical disturbance of these materials, however, should be avoided as activities such as cutting, drilling, grinding, sanding, or hammering may cause significant damage and lead to airborne fiber release.

#### Routine Maintenance or Repair Activities in Asbestos-Containing Environments

Maintenance or repair activities conducted where asbestos containing bituminous roof mastic materials are located must be given special attention. It is essential not to disturb these materials. Where maintenance activities cannot be avoided, special procedures must be introduced to limit the potential for damage and contamination of the surrounding areas.

Preparation of the Area Before Renovation or Maintenance Activities:

- a. Notify Supervisor and cordon off area.

- b. The supervisor will notify the O&M Program Manager to contact an asbestos abatement contractor for cleanup of the area.

Emergency Response-Damaged Asbestos Bituminous Roof Mastic Materials:

- a. Notify supervisor and cordon off area. Restrict access to the area and post signs to prevent entry into the area by persons other than those necessary to perform the response action.
- b. The supervisor will notify the O&M Program Manager to contact an asbestos abatement contractor for cleanup of the area.

**B. Built-up Composition Roof Membranes (If present)**

**General Description**

Asbestos containing built-up composition roof membrane is commonly used as a roof covering to protect the interior of the building from rain and moisture. Built-up roof composition membranes typically consist of low-friable materials. These materials are unlikely to pose a health threat if left undisturbed and should be monitored for damage.

Under normal conditions of use, asbestos fibers are bound into the matrix of the material and pose little or no hazard to building occupants. Mechanical disturbance of these materials, however, should be avoided as activities such as cutting, drilling, grinding, sanding, or hammering may cause significant damage and lead to airborne fiber release.

**Routine Maintenance or Repair Activities in Asbestos-Containing Environments**

Maintenance or repair activities conducted where asbestos containing built-up composition roof membranes are located must be given special attention. It is essential not to disturb these materials. Where maintenance activities cannot be avoided, special procedures must be introduced to limit the potential for damage and contamination of the surrounding areas.

Preparation of the Area Before Renovation or Maintenance Activities:

- a. Notify Supervisor and cordon off area.
- b. The supervisor will notify the O&M Program Manager to contact an asbestos abatement contractor for cleanup of the area.

Emergency Response-Damaged Asbestos Built-up Composition Roof Membranes:

- a. Notify supervisor and cordon off area. Restrict access to the area and post signs to prevent entry into the area by persons other than those necessary to perform the response action.

- b. The supervisor will notify the O&M Program Manager to contact an asbestos abatement contractor for cleanup of the area.

## **VI. RENOVATION/REMODELING OF NON-INSPECTED AREAS**

Before commencing renovation, remodeling or demolition of any area in this facility, prudent inspection and investigation of the presence of ACM must transpire. This shall include but not be limited to inspection of this facility's O&M Program to identify previously surveyed materials and areas. If upon inspection, a material or area undergoing renovation or remodeling has not been previously surveyed and sampled, then the property owner shall employ the services of an environmental consultant or lab approved for such services.

No known or suspect ACM shall be disturbed or involved in any work, in any way, prior to laboratory analysis for asbestos content.

## **VII. NOTIFICATION PROGRAM RESPONSIBILITIES**

### **Notification Program Responsibilities**

When required by law, notify all building employees, tenants, vendors, maintenance and custodial workers about the location of ACM and caution them against disturbing or damaging the ACM. Be sure to give this information to new occupants and employees.

## **VIII. INSPECTION PROGRAM**

### **Responsibilities**

In order to maintain this facility in the best possible condition, the following tasks must be accomplished.

### **Annual Inspection**

Each facility containing non-friable asbestos must have an annual physical "walkthrough," (using the original survey report and subsequent reinspection reports as a guideline) to confirm that all ACM in the facility is intact and manageable. If new damage is identified, it must be noted so that remedial action can be arranged.



DATE: \_\_\_\_\_  
 ROOM: \_\_\_\_\_  
 INSPECTOR: \_\_\_\_\_

ASBESTOS MATERIALS	STATUS OF MATERIAL		
	UNCHANGED	CONTACT DAMAGE	WATER DAMAGE
_____	Yes / No	Yes / No	Yes / No
_____	Yes / No	Yes / No	Yes / No
_____	Yes / No	Yes / No	Yes / No
_____	Yes / No	Yes / No	Yes / No
_____	Yes / No	Yes / No	Yes / No
_____	Yes / No	Yes / No	Yes / No
_____	Yes / No	Yes / No	Yes / No

**COMMENTS:** \_\_\_\_\_

**ACTION TAKEN:** \_\_\_\_\_

**ACTION APPROVED BY:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

## **IX. EMPLOYEE PROTECTION**

It is the express policy of the property owner that ACM present at the property, shall be maintained in such a way as to preclude the necessity of using personal protection equipment. No employees or tenant of the property, or outside contractor employee shall disturb any ACM.

Any asbestos-related tasks conducted at the property will be performed by a licensed asbestos abatement contractor.

## **X. RESPIRATOR PROGRAM**

As no property employee, occupant, or outside contractor shall be authorized to disturb ACM, no respirator program is required at the property.

Any asbestos-related task conducted at the property location, will be performed by a licensed asbestos abatement contractor.

## **XI. DEFINITIONS**

**Accessible material** - any material access to which can be gained by any means other than significant destruction of building components, or, for the purposes of describing building occupant activities, a material subject to disturbance by routine use or maintenance activities

**Asbestos** - the general name given to a number of naturally occurring hydrated mineral silicates each of which possesses a specific crystalline structure, is incombustible in air, and is separable into fibers. Asbestos includes the asbestiform varieties of Chrysotile (serpentine), Crocidolite (riebeckite), Amosite (cummingtonite-grunerite), Anthophyllite, and Actinolite.

**Asbestos-Containing Material (ACM)** - may be defined, as by the EPA, as any friable material or product containing greater than one percent asbestos or, by convention, as any material or product which contains >1% asbestos.

**Asbestos debris** - pieces of material which can reasonably be identified by color, texture or composition as being traceable to a known asbestos-containing application. May mean dust, if the dust is determined by analysis to be ACM.

**Bulk samples** - samples of bulk material; in the case of asbestos, suspect asbestos-containing material. Chain-of-custody - formal procedures for tracking samples and ensuring their integrity.

**Chatfield "Standard Operating Procedure"** - a sample preparation procedure for materials other than friable insulation in which, by means of acid digestion and ashing, it is possible to separate asbestos fibers from hard-to-analyze matrices. This preparation technique is used most often in conjunction with Electron Microscopy (EM) and is considered state-of-the-art for materials such as floor tile, plaster and textured ceiling material.

**Encapsulation** - treatment of ACM with a material that surrounds or embeds asbestos fibers in an adhesive or cementitious matrix to inhibit the release of fibers. The encapsulant creates a membrane over the surface of the material (bridging encapsulant) or penetrates the material or binds its components together (penetrating encapsulant).

**Enclosure** - an airtight, impermeable, permanent barrier around ACM to prevent the release of asbestos fibers into the air.

**EPA** - United States Environmental Protection Agency.

**Fair** - as used to describe material condition, damage is more prevalent or severe than on materials rated as good.

**Fiber release episode** - any uncontrolled or unintentional disturbance of ACM resulting in airborne asbestos fiber emission.

**Friability** - the physical characteristic of any solid that describes its ability to be broken down to a powder or dust. A highly friable material is one that can be easily crumbled by hand pressure. A moderately friable material is one that can be crumbled with some difficulty by hand pressure or by mechanical means. A low friability material is one that may require mechanical means to crumble. While the condition of a material does not constitute a measure of its friability, weathering and deterioration can increase the friability of a material.

**Glovebag** - a plastic enclosure with built-in gloves which is placed with an airtight seal around asbestos-containing pipe lagging or other materials such that they may be removed or repaired without generating airborne fibers.

**Good** - as used in the context of material condition, integrity of the material is generally complete, with possible small areas of delamination or indications of limited contact or water damage. The mechanism to retain the insulation in its original position (e.g. cloth wrapping over pipe insulation) is still present.

**Heating Ventilation and Air Conditioning (HVAC) system** - the system of pipes, ducts, and equipment, (air conditioners, chillers, heaters, boilers, pumps, fans) used to heat, cool and filter air and move it through a building. The HVAC system is one of several mechanical systems found in most buildings.

**High-Efficiency Particulate Air (HEPA) filter** - a filtering system capable of trapping and retaining at least 99.97 percent of all particles 0.3 micrometers in diameter or larger.

**Homogeneous application** - an application of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color, texture, and vintage of application.

**Lock-down** - application of a sealing material to ensure that any residual microscopic fibers remaining following asbestos removal are prevented from becoming airborne.

**Mechanical system** - a building component system: can include the plumbing system, elevator system, and others. (see Heating Ventilation and Air Conditioning system (HVAC).)

**NIOSH** - United States National Institute of Occupational Safety and Health.

**Operations and Maintenance (O&M) Program** - a program of work practices and training and management procedures designed to maintain ACM in good condition. An O&M Program ensures clean-up of asbestos fibers previously released and prevention of further release by minimizing and controlling ACM disturbance or damage. An O&M Program should be implemented at all buildings with ACM.

**Optical microscope** - a microscope which uses the transmission of light through lenses to magnify a specimen for examination. Capable of resolution of fibers or other materials down to approximately 0.25 micrometers in diameter.

**OSHA** - United States Occupational Safety and Health Administration.

**Phase Contrast Microscopy (PCM)** - an optical microscopic technique used for counting fibers in air samples. PCM does not distinguish between asbestos and non-asbestos fiber types. The PCM method currently recognized is referred to as NIOSH 7400.

**Physical assessment** - evaluating asbestos-containing material to determine its current condition and potential for future disturbance.

**Plenum** - a space in a building, other than a duct or shaft, designed to transport air. Plenums are commonly the space between a suspended ceiling and the floor above.

**Polarized Light Microscopy (PLM)** - an optical microscopic method for the identification of asbestos in bulk samples in which the sample is illuminated with polarized light.

**Poor** - as used in the context of material condition, material is obviously damaged with evidence of delamination or inadequate adhesion of the material to its substrate.

**Quality Assurance (QA)** - a process designed to provide confidence that the quality control program is being applied effectively. The process includes an auditing procedure designed to evaluate all known policies and procedures that affect the quality of results.

**Quality Control (QC)** - a program comprised of the operational procedures to ensure that data are of known and acceptable precision and accuracy.

**Response action** - any method, including removal, encapsulation, enclosure, repair, or Operations and Maintenance Program that minimizes harm to human health and the environment from the hazards and effects of ACM.

**Scanning Electron Microscopy (SEM)** - magnification 450-15,000x. Analytical technique used for air and bulk sample analysis. May use Energy Dispersive Spectroscopy (EDS) to positively identify chemical elements present in the sample. Method involves counting fibers (discriminating between fibers less than and greater than 5.0 microns length) in a known surface area of a filter or bulk material.

**Specifications** - a written set of standards, procedures, and materials for the abatement of asbestos. Includes contract documents detailing the Scope of Work of the project and defining Contractor, Building Owner and Consultant responsibilities.

**Transite** - a trade name for asbestos cement wallboard or pipe.

**Transmission Electron Microscopy (TEM)** - State-of-the-art analytical method for air and bulk sample analysis. Uses high magnification (typically 15,000x) to identify asbestos fibers. May utilize Energy Dispersive Spectroscopy (EDS) and/or Selected Area Electron Diffraction (SAED) to confirm asbestos and to identify the type of asbestos present. Recommended for final clearance air samples and for bulk analysis of samples with difficult-to-analyze matrices (e.g., plaster, vinyl tile). Provides the most definitive analysis of asbestos currently available.

**EXHIBIT A**

**ACM INSPECTION FORM**

## ANNUAL INSPECTION FORM

DATE: \_\_\_\_\_  
 ROOM: \_\_\_\_\_  
 INSPECTOR: \_\_\_\_\_

### STATUS OF MATERIAL

ASBESTOS MATERIALS	UNCHANGED	CONTACT DAMAGE	WATER DAMAGE
_____	Yes / No	Yes / No	Yes / No
_____	Yes / No	Yes / No	Yes / No
_____	Yes / No	Yes / No	Yes / No
_____	Yes / No	Yes / No	Yes / No
_____	Yes / No	Yes / No	Yes / No
_____	Yes / No	Yes / No	Yes / No
_____	Yes / No	Yes / No	Yes / No

**COMMENTS:** \_\_\_\_\_

**ACTION TAKEN:** \_\_\_\_\_

**ACTION APPROVED BY:** \_\_\_\_\_

**DATE:** \_\_\_\_\_