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8.10.0 Program Introduction

As our understanding of both acute and chronic health problems associated with indoor pollution increases, the importance of managing moisture infiltration into buildings becomes very critical. Water damaged building materials and furnishings, if not appropriately handled, can become significant sources of microbiological contamination in building environments leading to potential health problems for occupants ranging from simple irritation to allergic responses to hyper sensitivity diseases.

All buildings during their lifetime will have some form of water problems. Appropriate management of these water problems to reduce microbial growth will ensure the health of building occupants. The following protocol for managing moisture problems in buildings was developed based on industry accepted protocol for dealing with water problems in buildings.

Introduction to Mold (Fungi)

Molds (fungi) are present almost everywhere in indoor and outdoor environments. Mold is a group of living organisms that require nutrients, water and the appropriate temperature to continue their life cycles. Cellulose (plant material) is the nutrient source for most molds. Examples of cellulose include wood, drywall, glues and mastics.

Mold spores may be found lying dormant on almost every surface in a building. Unless large numbers of spores become airborne, there is usually little problem. However, when mold spores are on a surface with an appropriate moisture content, nutrients, and temperature, the spores will germinate and mold will grow. The key to identifying locations where mold is likely to grow is finding where these conditions exist, have occurred, or are likely to develop.

Mold should not grow indoors unless there are moisture problems in the building. Obvious causes of moisture problems include occupant-generated sources, floods, roof leaks, and problems with drainage or plumbing. A less obvious source of moisture is the effect of temperature gradients (temperature differences); especially in locations where relatively warm and moist air comes in contact with relatively cool surfaces. These conditions can cause water vapor to condense on building surfaces, just as it does on a glass of ice water on a warm, humid day.

Most molds must get their food from the environment, living and feeding on dead organic matter. Outdoors, molds are very important in decomposing organic materials and recycling nutrients. Indoors, many building components and contents contain materials that are excellent food sources for mold, such as wallpaper glue, some paints, greases, paper, textiles, and wood products. Indoor dusts may contain fibers, dead skin cells, and other organic matter that can serve as a food source for mold when adequate moisture is available.

Temperature also affects mold growth. Different types of mold have minimum, optimum and maximum temperature ranges for growth. Many fungi grow well at temperatures between 60 and 80 degrees Fahrenheit, which are also ideal temperatures for human comfort. In addition, as mentioned above, temperature gradients often produce the moisture needed for mold growth.

In the summer, when air-conditioning is in use, mold growth can occur in buildings where the cooling systems are oversized, undersized or poorly maintained. Unplanned air flow in buildings can also create conditions favorable to mold growth. A competent heating and air conditioning contractor should be able to address these issues.

In the winter, when buildings are heated, mold often grows in cold, un-insulated exterior windows and walls, including un-insulated closets along exterior walls where building surfaces are generally cold relative to the indoor air temperature.
8.10.1 Mold and Health Concerns

The growth of molds is a contributing factor to indoor air quality (IAQ) pollution and one that has become a growing concern to the apartment industry. Adverse health effects that may be associated with exposure to molds can vary from hay-fever type allergy symptoms to life-threatening respiratory infections, depending on the person affected and/or the type of mold.

When moldy materials such as wallboards and carpets are damaged or disturbed, mold organisms and associated products may be released into the air. Human contact with mold spores can occur through inhalation or direct contact. Some molds produce toxic chemicals called Mycotoxins, which can become airborne and contaminate airspace, even when surfaces appear free of mold infestation.

There are no federal or state regulations defining which molds are harmful or what air concentrations of mold pose a threat to health. Federal guidelines have been created to assist property owners in identifying and treating mold contamination.

Employee Training

There are no specific training requirements currently mandated by state and federal law for workers who remediate mold as part of their responsibilities. Notwithstanding, on-site staff should receive training necessary to carry out their responsibilities with respect to personal and public safety, public relations (communication with tenants), cleaning, removing, and restoring damaged surfaces, and documenting all remedial efforts.

Although there are no established Permissible Exposure Levels (PELs) or Threshold Limit Values (TLVs) for mold, as part of the required training under OSHA’s Hazard Communication Standard (29CFR 1910.1200), workers must be informed about safe work practices for using various chemicals, including disinfectants, and personal protective equipment, which may be a part of a mold response. Workers who may be involved in cleanup of extensive mold should be supplied with appropriate respirators, which may involve compliance with OSHA’s Respiratory Protection Standard (29CFR 1910.134). Additional information on these regulations is available at http://www.osha.gov.

The maintenance and building staff should gather and preserve all records and information that pertain to the affected unit(s) including, but not limited to complaints, remediation and maintenance activities(s).

Proper Maintenance Procedures

Routine maintenance and tenant turnover/improvement activities provide on-site staff with the opportunity to monitor and correct any conditions involving moisture that could result in the amplification of mold. The property staff should perform a visual survey for mold or conditions, which can result in mold growth, on a regular basis and as part of the tenant turnover inspection. Building staff is to be encouraged to monitor the property for signs of moisture, water damage or situations that may lead to conditions favorable for mold growth (e.g. leaking faucets, broken sprinkler heads, reoccurring condensation) when conducting maintenance activities. They should also be aware of situations such as carpet-cleaning-techniques, which may leave carpets too damp and run the risk of creating conditions favorable for mold growth.
8.10.2 Detecting Mold

Inspect your community and vacant apartments regularly. The key to avoiding problems is early discovery. As long as mold remains undiscovered, it will continue to grow and become more costly to correct. All occupied apartments should be inspected at least once per year and more often if your community has a problem with recurring water leaks. On-site staff should also be encouraged to monitor the property for signs of moisture, water damage or situations that may lead to conditions favorable for mold growth (e.g., leaking faucets, broken sprinkler heads) when conducting other maintenance activities. Also be aware of situations such as carpet-cleaning techniques, which may leave carpets too damp and run the risk of creating conditions favorable for mold growth.

Require residents to inform when they have leaks or floods. Even after a leak or flood is cleaned up, moisture can remain and create an ideal breeding ground for mold. If a resident chooses to clean up a leak or flood without your help, you won’t be able to prevent mold from growing and spreading.

Once detected, act quickly. It is important to take reports of mold seriously. Use professional judgment and common sense to determine the extent of the problem. Some types of molds are more dangerous than others. If the mold is black, consult your supervisor. If the contamination is isolated and minor, service staff may be able to remedy. If you detect larger areas or extensive contamination, a professional environmental consultant and/or an abatement service may be necessary.

Inventory all water damaged areas, building materials and furnishings. Special attention should be given to identify carpet under cabinets, furnishings, etc. Remember that if mold can be seen or smelled, a mold problem exists and it is probably unnecessary to have testing completed to identify the mold. A thorough visual inspection for mold growth, or signs of dampness or water damage as well as locating mold by smell is a reliable and cost effective method for identifying areas needing mold remediation.
8.10.3 Inspections

To reduce liability and repair costs associated with moisture in apartments we must follow a strict inspection and repair plan. Small problems that are ignored or go undetected grow into larger problems that cost the property and owner 1,000’s of dollars per year. Every apartment should be inspected periodically according to the status of the unit. Problems found during inspections must be documented through a service request, made a priority and noted as moisture related issue. Also utilize a moisture meter to identify extent of water damage to drywall.

In the event of water infiltration into building areas, remediation within 24 to 48 hours is critical in prevention of mold growth.

Mold and Moisture Mgmt Plan - Inspection Equipment List

The following equipment is available at most supply stores and is useful to have on site to deal with water intrusions and/or mold remediation.

1. Moisture meter, probe style.
2. High efficiency particulate air (HEPA) air filtered vacuum cleaner
3. Anti-fungal solution
4. Wet vacuum
5. Blower (if not on site, know where they can be rented)
6. Dehumidifiers ((if not on site, know where they can be rented)
7. Disposable clothing (1 box)
8. N-95 disposable respirators
9. 6-mil disposable bags
10. 6-mil polyethylene sheeting
11. Yellow caution tape
12. Plastic spray cleaning bottles
13. Disposable scrub brushes, sponges and cloths

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

1. Identify the source of the moisture: Following the discovery of water infiltration into building spaces, the first step is to identify whether the moisture source is clean or polluted water.

2. If the water infiltrating the building originates from a sanitary water source (no chemical or biological pollutants or sewage), the sooner repair, clean up and drying are accomplished, the likelihood of preventing mold growth is increased.

3. If mold growth is found proceed with remediation.
4. **Halt further moisture infiltration:** The next step is to halt further moisture intrusion by repairing the water leak. Conduct an inventory of the water damaged areas, building materials, and furnishings, paying special attention to identifying wet carpet under cabinets, furniture, and furnishings. If you can’t determine the start time of the water infiltration, it should be handled as if it has existed for more than 48 hours (see section titled “Guidance on Moisture Infiltration after 48 hours”).

5. **Determine whether materials are “dry”:** Using a moisture meter to evaluate materials in the impacted area for excess moisture.

**Note:** Potable, de-ionized, and distilled water are considered unpolluted, unless they have come in contact with a pollution source. All others are considered polluted. However, clean water may not remain clean as it contacts other surfaces or materials.

**Moisture Monitoring, Inspection and Evaluation Equipment**

The following is a list of equipment that can be employed to evaluate high moisture levels and facilitate drying of affected areas.

**Moisture Meters:** A moisture meter may be useful in the following situations:

- When a stain has been found on wallboard and a decision is needed as to whether the stain can be cleaned or further action is required.

- Sometimes it is difficult to determine when wallboard has been completely dried. In these cases, use a moisture meter to check drywall in the affected area and compare the reading to a non-affected area. Readings should be the same.

Table 1 references acceptable moisture levels for select building materials provided by William Yobe & Associates & U.S. Forest Products (USDA).

<table>
<thead>
<tr>
<th>Material/Component</th>
<th>Moisture %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseboard</td>
<td>7 to 10</td>
</tr>
<tr>
<td>Gypsum Wallboard</td>
<td>7 to 10</td>
</tr>
<tr>
<td>Hardwood Flooring</td>
<td>7 to 10</td>
</tr>
<tr>
<td>Framing Lumber</td>
<td>15 to 19</td>
</tr>
<tr>
<td>Wood Furnishings (interior)</td>
<td>7 to 12</td>
</tr>
</tbody>
</table>

**Vacant apartments:** Should be inspected weekly and after heavy rains. The office staff will be responsible for these inspections, since they will be inspecting units more than weekly as part of their marketing duties.

**Occupied apartments:** Should be inspected on a quarterly basis. This inspection should be performed when preventative maintenance is completed and documented in preventative maintenance log.

**In the case of a presumed mold contamination, a detailed visual inspection of the following areas should be conducted by trained personnel:**

- The basement and lower floor rooms, crawl-spaces
- Any rooms that have experienced water and/or flooding damage
- Window frames and carpets, including carpet backing in water-stained areas (if possible)
• Ceiling tiles or any formerly damp material made of fibrous cellulose (wallpaper, books, papers, cellulose-based insulation)
• All heating, ventilation, and air conditioning components
• Indoor spaces with exposed soil such as unfinished basements or crawl-spaces
• Greenhouses and water features (e.g., decorative fountains)
• Attics with resident or seasonal birds, bats, or other animals; and
• Other areas where excess moisture may be present (e.g., sauna areas, pools, spas, bathrooms)
• Clean and dry wet or damp spots within 48 hours.
• Don't let foundations stay wet. Ensure there is proper drainage and slope to the ground surrounding the foundation.

Safety Tips While Investigating and Evaluating Mold and Moisture Problems

• Do not touch mold or moldy items with bare hands.
• Do not get mold or mold spores in your eyes.
• Do not breathe in mold or mold spores.
• Use appropriate for Personal Protective Equipment (PPE) and containment guidelines.
• Use PPE when disturbing mold. The minimum PPE is a dust mask, gloves, and eye protection.
8.10.4 Quick Reference for Water Damage

Inventory all water damaged building materials and furnishings.

Sheetrock/Drywall

If within 24 hours and no known previous water damage: remove and discard with minimum controls. If after 24 hours or previous known water damage: remove and discard under controlled abatement conditions.

Ceiling Tile

If steam damage: air-dry and reuse and monitor for future mold growth. If other water damage: remove and dispose within 24 hours.

Electrical

Have checked by building inspector/electrician. Turn power off, and Discard electrical circuit breakers, GFI's, fuses, and Switches, outlets, electrical motors, light fixtures can be opened & inspected for visible moisture and re-used. If in doubt, throw it out.

Furniture

Upholstered steam or drinking water: air dry and monitor. If other water damage such as sewage: discard.

Hardwood or Intact Laminate

- Dry and clean surfaces, a moisture meter should be used to assess moisture content.
- Remove moisture immediately and use dehumidifiers, gentle heat, and fans for drying. (Use caution when applying heat to hardwood floors.)
- Treated or finished wood surfaces may be cleaned with mild detergent and clean water and allowed to dry.
- Wet paneling should be pried away from wall for drying.

Particleboard/Pressed Wafer board

If steam: air dry and monitor. Other water damage, such as sewage: discard.

Delaminated Furniture/Cabinets

If steam: air dry and monitor. If other water damage, such as sewage: discard.

Carpet

If wet for less than 48 hours: clean and disinfect. If wet for more than 48 hours: If winter: disinfect and dry. Discard if cannot dry. If summer (high humidity): discard. The subfloor under the carpet or other flooring material must also be cleaned and dried.

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.
8.10.5 Correcting Conditions Which May Lead To Mold Growth

Controlling moisture is the key step in preventing mold growth. Responding rapidly to reports of moisture or water penetration is often critical.

To control moisture inside:

- Inspect your community and apartments regularly.
- Fix plumbing leaks, drips, or sweating pipes as soon as detected.
- Watch for condensation and wet spots.
- Periodically service air-conditioning units. Include changing filters and inserting chlorine tablets in overflow pans.
- Remove moisture from air w/ dehumidifier
- If carpet is wet call for water extractions – use whistle fans to aid drying if necessary
- Prevent moisture due to condensation by increasing surface temperature or reducing the moisture level in air (humidity). To increase surface temperature, insulate or increase air circulation. To reduce the moisture level in air, repair leaks, increase ventilation (if outside air is cold and dry), or dehumidify (if outdoor air is warm and humid).

To control moisture outside:

- Maintain roof and gutter/downspout systems.
- Direct runoff away from foundation by making sure that all splash blocks and drain pipes are in place and operating correctly and by checking grading, drain tile, landscaping, etc.
- Prevent leakage around windows, doors, flashing, etc.
- Waterproof foundation structure.

Whenever there is any type of moisture intrusion from the exterior or interior of a structure that is caused by an act of God, mechanical or plumbing malfunction or by human error, every effort should be made to identify the source of the problem and repair the damaged area within 48 hours. Take the following actions to correct the problem:

- Inspect the area to find the sources of moisture.
- Using a Service Request form, document the problem, including the apartment number, size of the damage, the location within the unit where the damage occurred and the action(s) taken to repair the problem.
- Any apartments adjacent to the damaged apartments should also be inspected for moisture intrusion and damage.
8.10.6 General Guidelines for the Removal of Mold

The following guidelines should be used when removing mold, if the mold growth covers less than 30 square feet and after the source of the moisture has been determined. IF the growth covers more than 30 square feet a remediation specialist should be consulted. These guidelines do not apply to sewage loss, for sewage loss a remediation specialist should be consulted.

Questions to Consider Before Mold Removal

- Are there existing moisture problems in the building?
- Have building materials been wet more than 48 hours?
- Are there hidden sources of water or is the humidity too high (high enough to cause condensation)?
- Are building occupants reporting musty or moldy odors?
- Are building occupants reporting health problems?
- Are building materials or furnishings visibly damaged?
- Has maintenance been delayed or the maintenance plan been altered?
- Has the building been recently remodeled or has building use changed?
- Is consultation with medical or health professionals indicated?

Remediation Equipment

**Wet Vacuum**: Wet vacuums are vacuum cleaners designed to collect water. They can be used to remove water from floors, carpets, and hard surfaces where water has accumulated. They should not be used to vacuum porous materials, such as gypsum board. They should be used only when materials are still wet -- wet vacuums may spread spores if sufficient liquid is not present. The tanks, hoses, and attachments of these vacuums should be thoroughly cleaned and dried after use since mold and mold spores may stick to the surfaces.

**Dehumidifiers**: Dehumidifiers are devices designed to remove water vapor from the air. They can be used to lower humidity levels in affected areas to aid in drying. The number of dehumidifiers is dependent on the type of dehumidifier being used, the size of the affected area, and the type of building material affected.

**HEPA Air Cleaner**: HEPA air cleaners are designed to cycle air through the HEPA filter to capture small particles such as mold spores. Residential box fans, circular fans, etc. should not be used for structural drying in affected areas due to possible electrical shock hazards.

**HEPA Vacuum**: HEPA (High-Efficiency Particulate Air) vacuums are recommended for final cleanup of remediation areas after materials have been thoroughly dried and contaminated materials removed. HEPA vacuums are also recommended for cleanup of dust that may have settled on surfaces outside the remediation area. Care must be taken to assure that the filter is properly seated in the vacuum so that all the air must pass through the filter. When changing the vacuum filter, those doing the remediation should wear PPE to prevent exposure to the mold that has been captured. The filter and contents of the HEPA vacuum must be disposed of in well-sealed plastic bags.

Remediation Steps;

1. It is not necessary to determine the type of mold growth before removing it, as the methods of removal are the same for all types of mold. (There is no need for environmental testing.)
2. Mold removal work orders shall be processed in an expedited manner.

3. The HVAC unit in the work area should be deactivated.

4. Personal belongings should be removed from occupied units or stored in a closed room away from the work area. Food, cosmetics and other ingestible items should be removed from the work area.

5. Use of Personal Protective equipment consisting;
   a. Full faced negative pressure respirators (ex. North 7600 series) with N95 cartridges. The cartridge provides a HEPA filter to protect against particulates.
   b. Disposable tyvek coveralls covering both the head and the shoes.
   c. Gloves: Neoprene, Rubber, leather or cotton depending on the material to be removed. Leather is recommended when sharp material is expected to be encountered during the demolition.
   d. No person other than those performing work should be in the unit while the removal is taking place.
   e. If the area of mold growth is small and had not penetrated the material on which it grows, clean the area with an anti-fungal and water. DO NOT MIX BLEACH WITH AMMONIA, AS IT CREATES TOXIC FUMES!
   f. If the area of the mold growth has penetrated the material on which it grows and the area of mold growth is less than 30 sq. ft., install a portable HEPA air cleaner near the area of mold growth prior to beginning removal and run continually until the removal work is completed and for a period of 48 hours after the removal and cleanup. Doors to the unit should remain closed at all times until the HEPA air cleaner is removed from the unit.
   g. If there are personal items or furniture in the vicinity of the area of mold growth cover items with plastic and remove them from immediate area.
   h. Lightly mist surface of entire area with an anti-fungal water mixture in accordance with the manufacturer’s directions. Let dry 15-30 minutes.
   i. HEPA Vacuum the entire area of mold growth.
   j. Remove drywall/sheetrock, insulation, carpet/carpet pad, baseboard, etc on which mold has growing until you have a clean margin of approximately 18 inches or until you reach an immovable structure such as a bathtub, stud, etc. (Removing at least a 3’X3’ section of drywall/sheetrock to start may allow for easier, less noticeable repair of drywall/sheetrock.)
   k. Place materials removed directly into a heavy duty plastic bag, seal the bag with tape and discard. (There are no regulatory standards or special disposal requirements for moldy materials.)
   l. HEPA vacuum debris created by removal of mold and materials. The work area should be free of visible dust and debris.
   m. Clean immovable structures such as studs, flooring under carpet, etc., using a anti-fungal water mixture. If appropriate for the surface, use a steel brush with the anti-fungal water mixture.
   n. HEPA vacuum all immovable surfaces (after clean and dry).
   o. Lightly mist the entire affected area with an anti-fungal cleaner and water solutions again and let dry 15-30 minutes.
   p. Any plastic sheets that were used to cover furniture or personal items should be placed in a plastic bag and discarded.
   q. Make sure source of moisture has been repaired. (If uncertain make temporary repairs to cover open wall cavity and continue investigation and/or follow up.)
   r. Make sure the entire area is completely dry, using dehumidifier and fans as needed. Fans should not be installed in the work area until after removal and treatment of the visible mold growth is complete.
   s. Repair and replace drywall/sheetrock, insulation, baseboard, carpet/carpet pad, etc.
   t. Replace HVAC filter.
   u. The HEPA air cleaner should be left in the apartment for 24-48 hours after completion of work. When HEPA air
cleaner is retrieved, the repair work can be inspected for recurrence of mold growth or musty smell.
v. Reactivate the HVAC unit. Wash hands with soap after exiting the apartment work area and prior to using the hands to place anything in the mouth. Fungal organisms can cause dermatitis. Ingestion of the bacteria or fungi can cause severe diarrhea.
8.10.7 Repair Guidelines for Moisture Damage

Employees must wear Personal Protective Equipment, including protective eyewear or goggles, gloves and a N95 respirator, while making the repair.

Leaks that go unnoticed or are not immediately repaired will result in mold, mildew, carpet damage, etc. all of these things are costly to correct and can be controlled if the following steps are followed:

All leaks will be considered priority repairs:

1. Determine the source of the leak. It is imperative that we correctly determine the source of water penetration quickly to keep interior repair costs from escalating. Sometimes outside professionals help may be required to determine the source of hard to find leaks. Professional help is a smarter choice than rent loss or thousands of dollars in carpet and sheet rock replacement.

2. Make needed leak repairs, or schedule contractor to make repairs immediately (Same day, always). Follow up after repairs made, if the leak caused by rain, check the apartment the next rain to make sure the problem has been eliminated.

3. Dry out area completely and immediately. (Use fans, de-humidifier, wet-vac, etc.)

Damage to carpet and pad:

1. Roll back carpet; never fold carpet as that will leave creases.

2. In some cases it may be necessary to cut carpet seams in order to expose all pad needing to be removed. Extra care must be taken when cutting seams. Always use a carpet knife with a sharp blade. Do not cut at an angle. Make cuts with the blade straight up and down.

3. Remove and dispose of wet carpet pad. Wet-vac the entire area removing as much water as possible. Lay the damp carpet back in place and set carpet fans in locations where they will blow air under the entire area of the wet carpet.

4. In times when humidity is high or in apartments with major flooding it may be necessary to place dehumidifiers in the apartment to remove excess moisture from the air.

5. Place the dehumidifiers in the rooms with most water damage. Make sure arrangements are made to empty dehumidifier water pans or that a drain line is securely placed to drain appropriately.

6. Ensure the HVAC system is on to circulate air in the apartment. This will speed the drying time.

7. Ensure the carpet and floor are dry before reinstalling carpet and new pad (usually 2 to 3 days).

8. Install new pad in accordance with Blue Ridge specifications.

9. Clean carpet on both sides and spray with an anti-fungicide. Then re-lay the carpet.

10. When sewage is the cause of water damage, antibacterial treatment will be necessary before carpet can be relayed. These chemicals must be applied when the carpet is cleaned. Consult with your supervisor if you feel you need to contract with an outside company to perform these services.

   • Remove pad within twenty-four hours and discard in the trash receptacle.
   • Remove moisture from carpet and structure flooring using water extraction equipment.
   • Accelerate drying process with dehumidifiers and fans.
   • Raise carpet from floor to allow air circulation on both sides.
• The Community Manager or Service Manager determines whether or not the carpet should be cleaned or replaced.
• After the sub-floor is completely dry, spray sub-floor and/or affected area with a Microban™ solution to prevent fungus and mildew growth.
• Install new carpet pad. Install dry or new carpet. If existing carpet is used, shampoo and allow to dry completely.
• Replace HVAC return air conditioner filter.

**Damage to linoleum, ceramic tile and vinyl tiles:**

• Wear protective glasses, gloves and dust mask while making the repair.
• Vacuum or damp-wipe area with water and mild detergent after moisture is removed. Scrub, if necessary.
• Accelerate drying process with dehumidifiers and fans.
• The Community Manager or Service Manager determines whether or not the flooring is repaired or replaced.
• The floor must be completely dry prior to installing new covering.
• Replace saturated and damaged sub-floor. Spray sub-floor with Microban™ solution to prevent fungus and mildew growth.
• Replace HVAC return air conditioner filter.

**HVAC Ducts:**

If mold or mildew growth is visible or a musty smell is detected, contact a professional service specializing in ductwork cleaning to repair the problem. The professional service should be contacted within 24 hours of notification that a problem exists. To be prepared for this request, the following actions should be taken:

- Create a list of contractors that specialize in cleaning ductwork.
- Obtain two to three bids for the necessary work and submit to your supervisor.

If an employee does the work, they must wear Personal Protective Equipment (PPE) during inspection and repairs. The PPE should include disposable coveralls, gloves, goggles and an N95 respirator. For duct cleaning follow the steps listed below:

- Clean all vent covers that have an appearance of fungus, mildew or rust on them.
- Use an anti-fungal solution mixed according to the manufacturer’s directions to clean the area and vents on both sides. **Never mix bleach and ammonia.**
- Scrub the surface as needed and allow to dry completely.
- Do not reinstall vent cover until the HVAC ducts have been professionally cleaned by an outside contractor.
- If the vent needs to be replaced, seal it in a plastic bag and dispose of in the trash dumpster.
- Install new HVAC return filter before turning unit on.
- Inspect unit within one week of repair. If damage returns, notify your supervisor.

**Plumbing leaks (sewage):**

If you cannot find or repair the source of the problem, contact a licensed plumber immediately to make repair.

- Wear protective glasses, disposable coveralls, an N95 respiratory and gloves while making the repair.
• Remove the damage components and dispose of materials in sealed plastic bag, or buckets in the trash dumpster.
• Framing, flooring and exterior substrate which was affected by the sewage should be treated with an anti-bacterial solution mixed according the manufacturer’s directions for sewage. Bulk materials should be removed from the area and bagged to be disposed of.
• Dry out framing, flooring and exterior substrate using water extraction equipment.
• Accelerate drying process with dehumidifiers and fans.
• Replace all damaged or saturated sub-flooring, framing, insulation and veneer components within 24 hours.
• Use polyethylene sheeting drop cloths to protect floor, furniture and other items in the area.
• Install new return filter on HVAC before turning unit on.
• Re-inspect the source of the leak and repaired or replaced components within one week. If problems persist or damage returns, notify your supervisor.
8.10.8 Response to Resident’s Request Regarding Mold

If a resident visibly sees or smells mold and reports the problem:

- Complete a Service Request, noting the location of the problem within the apartment home.
- State where the resident or property personnel suspects moisture and/or mold is present.
- If a health concern is expressed or property damage is reported, immediately contact your Regional Property Manager and submit an Incident Report.
- Treat the service request as a priority. Inspect and repair the problem within 48 hours of notification following the steps previously outlined.
- Take pictures of any visible mold damage.
- If no mold is found, take picture of the complaint area.
- After the area has been inspected and/or repairs are made send the resident a Mold and Moisture Mgmt Plan - Resident Follow-up Letter for Mold Report and, if appropriate, a copy of Mold and Moisture Mgmt Plan – Tips to Control Moisture and/or Mold and Moisture Mgmt Plan – Resident’s Guide.
- Place a copy of the letter in the resident’s file.
- Document in detail any repairs that were made.

If the resident requests sampling or testing of the mold or mildew:

- Explain to the resident that we do not perform sampling or testing as there are no federal, state or local regulations stating material or air sampling is required.
- The resident may contact an agency to inspect the apartment for content in or on the material, substrate, framing or equipment or air if they should choose.
- Should the resident take actions to test the material; any destruction to the apartment home or building is prohibited.

If a resident complains of illness due to mold growth or a musty air smell, contact your supervisor immediately for further instructions.

If a resident tests the affected area and the results are positive:

- Request a copy of the report and send it your supervisor immediately.
- Do not discuss the details of the results with the resident.
- Communicate to the resident that the source of the problem will be repaired promptly and properly.
- The materials or equipment affected will be repaired and/or cleaned as previously outlined.

Within 7 – 10 Days, send the applicable resident letters as referenced above and log the follow-up action in your management software. In the event of severe mold contamination, follow-up inspections should be completed every 2 weeks for a period of no less than 2 months after the remediation has been completed.
References


Mold & Moisture Management Plan
Inspection Equipment List

The following equipment is available at most supply stores and is useful to have on site to deal with water intrusions and/or mold remediation.

1. Moisture meter, probe style.
2. High efficiency particulate air (HEPA) air filtered vacuum cleaner
3. Anti-fungal solution
4. Wet vacuum
5. Blower (if not on site, know where they can be rented)
6. Dehumidifiers ((if not on site, know where they can be rented)
7. Disposable clothing (1 box)
8. N-95 disposable respirators
9. 6-mil disposable bags
10. 6-mil polyethylene sheeting
11. Yellow caution tape
12. Plastic spray cleaning bottles
13. Disposable scrub brushes, sponges and cloths
Date: «sitepropertydate»

From: «sitepropertymanager», Property Manager / Agent for Owner
   «sitename»
   «siteaddressline1and2»
   «siteaddresscity», «siteaddressstate» «siteaddresszipcode»
   «sitophone»

To: «leasesigners»
   «residentmailingaddressline1and2»
   «residentmailingcity», «residentmailingstate» «residentmailingzipcode»

«unitbuildingnumberwithlabels»

Dear «leasesigners» and all others in possession:

Maintenance has been performed in your apartment to attend to a problem involving water or moisture. Although repairs have been completed and you should not expect reoccurrence, please monitor the repaired area and promptly report any signs of further discoloration to the management office.

Please refer to the attached tips and recommendations, which contains useful information for preventing moisture in your apartment home. It is suggested that you utilize these suggestions in an effort to make your living environment more comfortable, and possibly reduce or eliminate moisture related problems.

We hope that all of your concerns have been addressed to your satisfaction, if you have other maintenance issues that need to be reported, please contact management.

By __________________________________________________
   «sitecurrentagent»

Date notice was [___] hand delivered, [___] mailed, and/or [___] left in apartment: ____ / ____ / _______
Mold & Moisture Management Plan
The Resident’s Guide to Mold

What are molds? Molds are microscopic fungi. They are part of the same family as yeasts, toadstools and mushrooms. Fungi grow and reproduce rapidly and as they grow they produce spores —specialized reproductive cells —and mycelia—fine, white filaments or threads.

- Mold can be harmful or helpful—depending on where it grows.
- Mold needs moisture to grow.
- Mold does not grow on dry materials.
- Mold growing inside home can affect occupants’ health.
- Occupants can learn to recognize mold.

How can you tell if it is mold?

Discoloration
One sign of mold is discoloration. Not all discoloration is mold. Carpeting near baseboards, for example, can be stained by outdoor pollution entering the dwelling. Smoke from burning candles or cigarettes may also cause stains or soot. Mold may be any color: black, white, red, orange, yellow, blue or violet. Dab a drop of bleach onto a suspected spot. If the stain loses its color or disappears, it may be mold. If there is no change, it probably isn’t mold.

Smell
Sometimes molds are hidden. A musty or earthy smell is often a sign that there is mold. But not all molds create an odor. Even when you don’t notice a smell, wet spots, dampness or signs of a water leak indicate moisture problems that can be followed by mold growth.

Preventing mold
Mold needs moisture to grow. Controlling moisture and keeping the home dry prevents the growth of mold.

- Report leaks to the Property Manager promptly.
- Keep the apartment dry. Think of the different ways activities such as cooking or bathing produce moisture inside the home. Exhaust fans remove moisture as it is produced. If there are no fans, open windows for a short time, but remember that moist outdoor conditions will not dry the inside air and wind can push the moisture to other parts of the unit.
- Measure how much moisture is in the air. To find out the relative humidity, you’ll need a hygrometer. You can buy one at a hardware store or electronics store. A hygrometer costs from $10 to $60. Your home’s relative humidity should be under 45 per cent (or lower to avoid condensation on windows) in the winter. If necessary, use a dehumidifier to lower the relative humidity.
- Discard clutter and excess stored materials. Molds grow on fabrics, paper, wood and practically anything that collects dust and holds moisture.
- Keep the apartment clean by vacuuming regularly.
- Adopt lifestyle practices that reduce moisture.
Mold & Moisture Management Plan
Tips to Control Moisture and Humidity in Your Home

It is our goal to maintain the highest quality living environment for our residents. To help achieve this goal, it is important to work together to minimize the potential for conditions that could lead to the growth of naturally occurring mold. Residents can help minimize mold growth in their apartment homes by taking the following actions:

- Open windows. Proper ventilation is essential. If it is not possible to open windows, run the fan on the apartment air-handling unit to circulate fresh air throughout your apartment.
- In damp or rainy weather conditions, keep windows and doors closed.
- If possible, maintain a temperature of between 50º and 80º Fahrenheit within your apartment at all times.
- Clean and dust your apartment on a regular basis as required by your lease. Regular vacuuming, mopping, and use of environmentally safe household cleaners is important to remove household dirt and debris that contribute to mold growth.
- Periodically clean and dry the walls and floors around the sink, bathtub, shower, toilets, windows and patio doors using a common household disinfecting cleaner.
- On a regular basis, wipe down and dry areas where moisture sometimes accumulates, like countertops, windows and windowsills.
- Use the pre-installed bathroom fan or alternative ventilation when bathing or showering and allow the fan to run until all excess moisture has vented from the bathroom.
- Use the exhaust fans in your kitchen when cooking or while the dishwasher is running and allow the fan to run until all excess moisture has vented from the kitchen.
- Use care when watering houseplants. If spills occur, dry up excess water immediately.
- Ensure that your clothes dryer vent is operating properly, and clean the lint screen after every use.
- When washing clothes in warm or hot water, watch to make sure condensation does not build up within the washer and dryer closet; if condensation does accumulate, dry with a fan or towel.
- Thoroughly dry any spills or pet urine on carpeting.
- Do not overfill closets or storage areas. Ventilation is important in these spaces.
- Do not allow damp or moist stacks of clothes or other cloth materials to lie in piles for an extended period of time.
- Immediately report to the management office any evidence of a water leak or excessive moisture in your apartment, storage room, garage, or any common area.
- Immediately report to the management office any evidence of mold growth that cannot be removed by simply applying a common household cleaner and wiping the area. Also report any area of mold that reappears despite regular cleaning.
- Immediately report to the management office any failure or malfunction with your heating, ventilation, air-conditioning system, or laundry system.
- As your lease provides, do not block or cover any of the heating, ventilation or air-conditioning ducts in your apartment.
- Immediately report to the management office any inoperable windows or doors.
- Immediately report to the management office any musty odors that you notice in your apartment.