

MOLD CLEANUP GUIDE



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1.0 Introduction

The Texas Department of Licensing and Regulation regulates mold remediation in the state by administering the Texas Mold Assessors and Remediators Occupations Code and Administrative Rules. Additional information regarding the Texas Mold Program and the state mold statute can be found on their homepage at www.tdlr.texas.gov/mlr/mlr.htm. This guide contains information and best practices concerning mold remediation but should not be considered a formal mold remediation protocol developed by a licensed mold remediation consultant. This mold cleanup guide has been based on literature and remediation documents and reference sources including: The Environmental Protection Agency (EPA), Texas Department of Licensing and Regulation Texas Mold Assessors and Remediators Administrative Rules, Institute of Inspection, Cleaning and Restoration Certification (IICRC) S520 Standard and Reference Guide for Professional Mold Remediation, and the American Conference of Governmental Industrial Hygienist (ACGIH) Guidelines for the Assessment of Bioaerosols in the Indoor Environment.

There are different options concerning mold remediation in the State of Texas regarding how or who can take action. As the homeowner, you are exempt from the mold law and are free to do any remediation you need regardless of the amount of mold. The law only take effect when you hire someone to do the work. If the amount of material that needs to be cleaned or removed to remediate visible mold is less than 25 contiguous square feet, you are free to hire anyone you want to do the remediation. If the amount of material that needs to be cleaned or removed exceeds the 25 contiguous square foot threshold, the law states that the work must be done by a licensed mold remediation company.

If you choose to use a licensed mold remediation company, regardless of whether or not it is below or above than 25 contiguous square feet, the law also states that there must be an inspection and protocol (work plan) put in place first by a licensed mold assessment consultant, which is a service NTX Enviro provides. There are benefits to using a licensed mold remediation company as they have the experience, equipment, and knowledge to handle the project correctly plus it makes you eligible for a Certificate of Mold Damage Remediation upon completing a successful a clearance inspection and the project is deemed to have met the protocol and state clearance criteria. Should you sell the property in the future, you can provide the certificate and related reports to show the potential buyer that you had the project taken care of professionally.

Why is mold growing in my home?

Molds are part of the natural environment. Outdoors, molds play a part in nature by breaking down dead organic matter such as fallen leaves and dead trees, but indoors, mold growth should be avoided. Molds reproduce by means of tiny spores; the spores are invisible to the naked eye and float through outdoor and indoor air. Mold may begin growing indoors when mold spores land on surfaces that are wet. There are many types of mold, and none of them will grow without water or moisture.

Can mold cause health problems?

Molds are usually not a problem indoors unless mold spores land on a wet or damp spot and begin growing. Molds have the potential to cause health problems. Molds produce allergens (substances that can cause allergic reactions) and irritants. Inhaling or touching mold or mold spores may cause allergic reactions in sensitive individuals. Allergic responses include hay fever-type symptoms, such as sneezing, runny nose, red eyes, and skin rash.

Allergic reactions to mold are common. They can be immediate or delayed. Molds can also cause asthma attacks in people with asthma who are allergic to mold. In addition, mold exposure can irritate the eyes, skin, nose, throat, and lungs of both mold-allergic and non-allergic people. Symptoms other than the allergic and irritant types are not commonly reported as a result of inhaling mold. Research on mold and health effects is ongoing.

The above does not describe all potential health effects related to mold exposure. For more detailed information consult a health professional, your state or local health department, or the [Centers for Disease Control and Prevention mold website](http://www.cdc.gov/mold/).

How do I get rid of mold?

It is impossible to get rid of all mold and mold spores indoors; some mold spores will be found floating through the air and in-house dust. The mold spores will not grow if moisture is not present. Indoor mold growth can and should be prevented or controlled by controlling moisture indoors. If there is mold growth in your home, you must clean up the mold **and** fix the water problem. If you clean up the mold, but don't fix the water problem, then, most likely, the mold problem will come back.

Ten Things You Should Know about Mold

1. Potential health effects and symptoms associated with mold exposures include allergic reactions, asthma, and other respiratory complaints.
2. There is no practical way to eliminate all mold and mold spores in the indoor environment; the way to control indoor mold growth is to control moisture.
3. If mold is a problem in your home or school, you must clean up the mold and eliminate sources of moisture.
4. Fix the source of the water problem or leak to prevent mold growth.
5. Reduce indoor humidity (to 30-60%) to decrease mold growth by:
 - a. Venting bathrooms, dryers, and other moisture-generating sources to the outside
 - b. Using air conditioners and de-humidifiers
 - c. Increasing ventilation
 - d. Using exhaust fans whenever cooking, dishwashing, and cleaning
6. Clean and dry any damp or wet building materials and furnishings within 24-48 hours to prevent mold growth.
7. Clean mold off hard surfaces with water and detergent, and dry completely. Absorbent materials such as ceiling tiles, that are moldy, may need to be replaced.
8. Prevent condensation: Reduce the potential for condensation on cold surfaces (i.e., windows, piping, exterior walls, roof, or floors) by adding insulation.
9. In areas where there is a perpetual moisture problem, do not install carpeting (i.e., by drinking fountains, by classroom sinks, or on concrete floors with leaks or frequent condensation).
10. Molds can be found almost anywhere; they can grow on virtually any substance, providing moisture is present. There are molds that can grow on wood, paper, carpet, and foods.

2.0 Mold Cleanup

Tips and Techniques

Places that are often or always damp can be hard to maintain completely free of mold. If there's some mold in the shower or elsewhere in the bathroom that seems to reappear, increasing the ventilation (running a fan or opening a window) and cleaning more frequently will usually prevent mold from recurring, or at least keep the mold to a minimum.

The tips and techniques presented in this section will help you clean up your mold problem. Professional cleaners or remediators may use methods not covered in this publication. Please note that mold may cause staining and cosmetic damage. It may not be possible to clean an item so that its original appearance is restored.

- Fix plumbing leaks and other water problems as soon as possible. Dry all items completely.
- Scrub mold off hard surfaces with a grease cutting detergent and water. Dry completely.
- Absorbent or porous materials, such as ceiling tiles and carpet, may have to be thrown away if they become moldy. Mold can grow on or fill in the empty spaces and crevices of porous materials, so the mold may be difficult or impossible to remove completely.
- Avoid exposing yourself or others to mold (see: **Section 3.0 What to Wear When Cleaning Moldy Areas** and **Section 6.0 Hidden Mold**.)
- Do not paint or caulk moldy surfaces. Clean up the mold and dry the surfaces before painting. Paint applied over moldy surfaces is likely to peel.
- If you are unsure about how to clean an item, or if the item is expensive or of sentimental value, you may wish to consult a specialist. Specialists in furniture repair, restoration, painting, art restoration and conservation, carpet and rug cleaning, water damage, and fire or water restoration are commonly listed in phone books. Be sure to ask for and check references. Look for specialists who are affiliated with professional organizations.

General guidelines for successful mold remediation

1. Clean or dispose of all furnishings exposed to mold:
 - a. Permeable and washable (clothing, bedding, and other washable items): Follow manufacturers' recommendations for cleaning.
 - b. Non-permeable and washable (wood, metal, plastic, glass, and ceramics): Scrub clean with a grease cutting detergent solution. If item still requires cleaning, use a solution of one-quarter cup bleach to one gallon of water. Bleach may fade colors, spot test before using.
 - c. Permeable but not washable (beds and furniture): If furnishings or items are moldy, consider discarding and replacing. Carpeting and upholstered furniture, if not irreparably damaged by mold, can sometimes be cleaned by a professional using hot-water extraction.
2. Remove contaminated and water-damage materials when feasible. When removing wall/ceiling surfaces, cabinetry, or baseboards, the underlying cavities and building materials should be inspected for additional hidden mold growth. Contaminated wall/ceiling surfaces and other materials should be removed, if feasible, at least 18" in all directions past the last appearance of mold growth. Any water damaged non-structural building materials with mold growth must be removed and disposed of. Mold and water damaged materials should be immediately placed in double bagged and sealed 6-mil polyethylene plastic bags.
3. Remove and dispose of any insulation where mold contamination is visible and where damaged drywall has to be removed.
4. Inspect and evaluate carpet for signs of water damage and/or mold growth. Remove carpet if signs of mold growth or delamination are observed or carpet cannot be salvaged by the cleaning methods listed in U.S. EPA Cleaning Methods Table 2 at the end of this report.
5. Clean/remove any mold growth found on structural surfaces and within the exposed cavities. Clean in-place structurally sound framing, flooring, ceiling joists, metal, and other wood structures by sanding, grinding, wire brushing, use of hydrogen peroxide based cleaner and stain remover or HEPA vacuum assisted power tools. Remove all fungal growth from the affected materials or the materials should be removed and replaced whenever structurally feasible.
6. Clean/remove any mold growth found on non-porous surfaces such as metal or glass or painted/sealed wood, which is not water-damaged or wet, using a grease cutting detergent solution. Water damaged structural materials should be removed and replaced whenever feasible.
7. Wipe down all surfaces with a grease cutting detergent solution.
8. Wipe down all areas/surfaces exposed during remediation with an EPA-approved anti-microbial disinfectant solution.
 - Anti-microbial disinfectant solution used should be designed to neutralize and inhibit growth of microbial bacteria.
 - Anti-microbial disinfectant solution shall not be used in any manner inconsistent with the manufacturer's recommendations for application.
9. Dry all remaining materials. Wood materials should be 15% moisture content or less.
10. Mold and mold spore-containing waste should be double bagged and sealed in 6-mil polyethylene bags. The bags should be transported to and disposed of in a landfill approved for disposal of mold and mold spore containing waste.

3.0 What to wear when cleaning moldy areas

It is important to take precautions to limit your exposure to mold and mold spores. The EPA Guidelines for Remediation of Building Materials with Mold Growth by Clean Water requirements for PPE should be followed. The complete table is included at the end of this document in U.S. EPA Cleaning Methods, Table 2.

The primary function of personal protective equipment is to limit mold exposure. If a remediation job disturbs mold, and mold spores then become airborne, the risk of respiratory exposure increases. Actions likely to stir up mold include:

- Breaking moldy porous materials such as wallboard
- Using invasive procedures to examine or remediate mold growth in wall cavities
- Stripping or peeling wallpaper to remove it
- Using fans to dry items

Gloves

Gloves protect the skin from contact with mold. They also protect the skin from potentially irritating cleaning solutions. Long gloves that extend to the middle of the forearm are recommended. The material from which gloves are made should be suited to the type of materials being handled. If a biocide or a strong cleaning solution will be used, gloves should be made from:

- Natural rubber
- Polyurethane
- Neoprene
- Polyvinylchloride (PVC)
- Nitrile

If a mild detergent is being used, ordinary household rubber gloves are suitable. The routine use of biocides is not recommended.

Goggles

Properly fitted goggles or full-face respirators provide eye protection. Goggles must be designed to keep out dust and small particles. Safety glasses or goggles that have open vent holes are not acceptable.

Respirators

Respirators protect remediation workers from inhaling airborne mold, mold spores and dust. Three types of respiratory protection are described:

- Minimum
- Limited
- Full

Only respirators approved by the National Institute for Occupational Safety and Health (NIOSH) should be worn during mold remediation. These respirators must be used according to any applicable Occupational Safety and Health Administration (OSHA) regulations.

NIOSH Respirator Classifications			
Unlike dust masks, respirators, whether disposable or reusable, must meet standards from the National Institute for Occupational Safety and Health (NIOSH). Classification meanings are listed below.			
OIL RESISTANCE	FILTER EFFICIENCY		
	95 (≥95%)	99 (≥99%)	100 (≥99.97%)
N (Not resistant to oil)	N95	N99	N100
R (Resistant to oil)	R95	R99	R100
P (Oil proof; time-use limitations)	P95	P99	P100

Disposable clothing prevents the transfer and spread of mold to clothing and eliminates skin contact with mold. When limited protection is warranted, disposable paper coveralls can be used. When full protection is required, a body suit of breathable material, such as TYVEK®, and mold-impervious disposable head and foot coverings should be used. All gaps, such as those around ankles and wrists, should be sealed.

How do I know when the remediation or cleanup is finished?

You must have completely fixed the water or moisture problem before the cleanup or remediation can be considered finished.

- You should have completed mold removal. Visible mold and moldy odors should not be present. Please note that mold may cause staining and cosmetic damage.
- You should have revisited the site(s) shortly after cleanup and it should show no signs of water damage or mold growth.
- People should have been able to occupy or re-occupy the area without health complaints or physical symptoms.
- Ultimately, this is a judgment call; there is no easy answer.

4.0 Moisture and Mold Prevention and control tips

Moisture Control is the Key to Mold Control.

- When water leaks or spills occur indoors - ACT QUICKLY. If wet or damp materials or areas are dried 24-48 hours after a leak or spill happens, in most cases mold will not grow.
- Clean and repair roof gutters regularly.
- Make sure the ground slopes away from the building foundation, so that water does not enter or collect around the foundation.
- Keep air conditioning drip pans clean and the drain lines unobstructed and flowing properly.
- Keep indoor humidity low. If possible, keep indoor humidity below 60 percent (ideally between 30 and 50 percent) relative humidity. Relative humidity can be measured with a moisture or humidity meter, a small, inexpensive (\$10-\$50) instrument available at many hardware stores.
- If you see condensation or moisture collecting on windows, walls, or pipes - ACT QUICKLY to dry the wet surface and reduce the moisture/water source. Condensation can be a sign of high humidity.

Actions that will help to reduce humidity:

- Vent appliances that produce moisture, such as clothes dryers, stoves, and kerosene heaters to the outside where possible. (Combustion appliances such as stoves and kerosene heaters produce water vapor and will increase the humidity unless vented to the outside.)
- Use air conditioners and/or de-humidifiers when needed.
- Run the bathroom fan or open the window when showering. Use exhaust fans or open windows whenever cooking, running the dishwasher or dishwashing, etc.

Actions that will help prevent condensation:

- Reduce the humidity (see above).
- Increase ventilation or air movement by opening doors and/or windows, when practical. Use fans as needed.
- Cover cold surfaces, such as cold-water pipes, with insulation.
- Increase air temperature.

5.0 Testing or sampling for mold

Is sampling for mold needed? In most cases, if visible mold growth is present, sampling is unnecessary. Since no EPA or other federal limits have been set for mold or mold spores, sampling cannot be used to check a building's compliance with federal mold standards. Surface sampling may be useful to determine if an area has been adequately cleaned or remediated. Sampling for mold should be conducted by professionals who have specific experience in designing mold sampling protocols, sampling methods, and interpreting results. Sample analysis should follow analytical methods recommended by the American Industrial Hygiene Association (AIHA), the American Conference of Governmental Industrial Hygienists (ACGIH), or other professional organizations.

Sampling Methods

Spore-Trap Cassette Air Sample

- Air sampling is designed to count and identify the presence of total fungal material in a measured volume of air. These samples are taken by using a calibrated sample pump that forces air through a spore-trap cassette to collect mold spores for analysis via a microscopic screen. Culturable fungi or bacteria can be collected for analysis with either a Via-Cell® Bio-Aerosol sampling cassette or an N-6 impactor.

Wall/Ceiling Cavity Sample

- Samples are collected by drilling a small access hole into the surface of the area to be sampled and inserting a plastic tube into the hole through which an air sample is pulled. These samples are collected on a spore-trap cassette and analyzed microscopically. Wall/Ceiling Cavity samples are typically collected at locations associated with known plumbing leaks, roof leaks or any other source of water intrusion.

Dust Sample

- Dust samples are samples of the dust material located within the carpets or other porous materials. These samples are analyzed via a microscopic screen, viable fungi culture, or viable bacteria culture. The viable culture data is reported in colony-forming units per gram (CFU/g) of dust. Bulk dust samples are collected to determine the average microbial loading within a fabric material.

Surface Sample

- Surface samples are collected on sterile cotton swabs and immediately sealed and labeled. These samples can be collected over a predetermined surface area or as a composite sample from various points on a contaminated surface. Surface samples are collected at locations exhibiting visible water staining or microbial growth. They are taken for the purposes of identification utilizing a microscopic screen, viable fungi culture or viable bacteria culture. Tape samples are another form of surface sample collected from a specific location exhibiting microbial contamination. They are utilized to microscopically identify fungi and cannot be cultured for fungi or bacteria.

Bulk Sample

- Bulk samples are typically a 2" x 2" piece of material that is cut from its surroundings and having visible microbial growth or a suspect area on it. The bulk sample is then placed in a sealed container and submitted to the laboratory via a chain of custody for analysis.

DIY Mold Surface Sample

Homeowners can do their own simple surface testing using a piece of scotch tape and a Ziploc bag. The scotch tape is simply stuck to the area in question and then removed, stuck to the inside of the Ziploc bag, sealed and then it can be brought or mailed to the [MoldLab](#), a Texas licensed mold laboratory located in Carrollton, Texas. Directions and a Chain of Custody document can be found [here](#). The [MoldLab](#) also rents air pumps and sells spore trap cassettes should a homeowner wish to do air sampling as well. Testing instructions, directions and information is available at their website at www.moldlab.com. Reports are generally available within three (3) business days. If having a surface sample analyzed by the lab, consider requesting the sample type that returns raw count results (Moldlab code "9"). Small raw counts and/or concentrations (around 10 raw count or 250 s/cm²) can be found in typical dust samples because mold spores are a normal part of our air make up. Much higher raw counts and concentrations (50 or more raw count or 1100 s/cm²) tend to come directly from the source of the mold.

6.0 Hidden mold

Suspicion of hidden mold

You may suspect hidden mold if a building smells moldy, but you cannot see the source, or if you know there has been water damage and residents are reporting health problems. Mold may be hidden in places such as the back side of dry wall, wallpaper, or paneling, the top side of ceiling tiles, the underside of carpets and pads, etc. Other possible locations of hidden mold include areas inside walls around pipes (with leaking or condensing pipes), the surface of walls behind furniture (where condensation forms), inside ductwork, and in roof materials above ceiling tiles (due to roof leaks or insufficient insulation).

Investigating hidden mold problems

Investigating hidden mold problems may be difficult and will require caution when the investigation involves disturbing potential sites of mold growth. For example, removal of wallpaper can lead to a massive release of spores if there is mold growing on the underside of the paper. If you believe that you may have a hidden mold problem, consider hiring an experienced professional.

Cleanup and biocides

Biocides are substances that can destroy living organisms. The use of a chemical or biocide that kills organisms such as mold (chlorine bleach, for example) is not recommended as a routine practice during mold cleanup. There may be instances, however, when professional judgment may indicate its use (for example, when immune-compromised individuals are present). In most cases, it is not possible or desirable to sterilize an area; a background level of mold spores will remain - these spores will not grow if the moisture problem has been resolved. If you choose to use disinfectants or biocides, always ventilate the area, and exhaust the air to the outdoors. Never mix chlorine bleach solution with other cleaning solutions or detergents that contain ammonia because toxic fumes could be produced.

Please note

Dead mold may still cause allergic reactions in some people, so it is not enough to simply kill the mold, it must also be removed.

For more information on mold related issues including mold cleanup and moisture control/condensation/ humidity issues, visit: www.epa.gov/mold

7.0 U.S. EPA Cleaning Methods

U.S. EPA Table 1

Table 1: Water Damage - Cleanup and Mold Prevention	
<i>Guidelines for Response to Clean Water Damage within 24-48 Hours to Prevent Mold Growth*</i>	
Water-Damaged Material†	Actions
Books and papers	<ul style="list-style-type: none"> - For non-valuable items, discard books and papers. - Photocopy valuable/important items, discard originals. - Freeze (in frost-free freezer or meat locker) or freeze-dry.
Carpet and backing - dry within 24-48 hours§	<ul style="list-style-type: none"> - Remove water with water extraction vacuum. - Reduce ambient humidity levels with dehumidifier. - Accelerate drying process with fans.
Ceiling tiles	<ul style="list-style-type: none"> - Discard and replace.
Cellulose insulation	<ul style="list-style-type: none"> - Discard and replace.
Concrete or cinder block - surfaces	<ul style="list-style-type: none"> - Remove water with water extraction vacuum. - Accelerate drying process with dehumidifiers, fans, and/or heaters.
Fiberglass insulation	<ul style="list-style-type: none"> - Discard and replace.
Hard surface, porous - flooring§ (Linoleum, ceramic tile, vinyl)	<ul style="list-style-type: none"> - Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary. - Check to make sure under flooring is dry; dry under flooring if necessary.
Non-porous, hard surfaces - (Plastics, metals)	<ul style="list-style-type: none"> - Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary.
Upholstered furniture	<ul style="list-style-type: none"> - Remove water with water extraction vacuum. - Accelerate drying process with dehumidifiers, fans, and/or heaters. - 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 specializes in furniture.
Wallboard - (Drywall and gypsum board)	<ul style="list-style-type: none"> - May be dried in place if there is no obvious swelling and the seams are intact. If not, remove, discard, and replace. - Ventilate the wall cavity, if possible.
Window drapes	<ul style="list-style-type: none"> - Follow laundering or cleaning instructions recommended by the manufacture.
Wood surfaces	<ul style="list-style-type: none"> - 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.
<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> <p>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 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.</p> <p>† If a particular item(s) has high monetary or sentimental value, you may wish to consult a restoration/water damage specialist.</p> <p>§ The sub floor under the carpet or other flooring material must also be cleaned and dried. See the appropriate section of this table for recommended actions depending on the composition of the sub floor.</p>	

U.S. EPA Table 2

Table 2: Guidelines for Remediating Building Materials with Mold Growth Caused by Clean Water*			
Material or Furnishing Affected	Cleanup Methods†	Personal Protective Equipment	Containment
SMALL - Total Surface Area Affected Less Than 10 square feet (ft2)			
Books and papers	3	Minimum N-95 respirator, gloves, and goggles	None required
Carpet and backing	1, 3		
Concrete or cinder block	1, 3		
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1, 2, 3		
Non-porous, hard surfaces (plastics, metals)	1, 2, 3		
Upholstered furniture & drapes	1, 3		
Wallboard (drywall and gypsum board)	3		
Wood surfaces	1, 2, 3		
MEDIUM - Total Surface Area Affected Between 10 and 100 (ft2)			
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		
Concrete or cinder block	1, 3		
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1, 2, 3		
Non-porous, hard surfaces (plastics, metals)	1, 2, 3		
Upholstered furniture & drapes	1, 3, 4		
Wallboard (drywall and gypsum board)	3, 4		
Wood surfaces	1, 2, 3		
LARGE - Total Surface Area Affected Greater Than 100 (ft2) 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 exposure and size of contaminated area
Carpet and backing	1, 3, 4		
Concrete or cinder block	1, 3		
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1, 2, 3, 4		
Non-porous, hard surfaces (plastics, metals)	1, 2, 3		
Upholstered furniture & drapes	1, 2, 4		
Wallboard (drywall and gypsum board)	3, 4		
Wood surfaces	1, 2, 3, 4		
<p>*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. 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 if you and/or your remediator do not have expertise in remediating contaminated water situations.</p> <p>†Select method most appropriate to situation. Since molds gradually destroy the things they grow 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.</p> <p>Cleanup 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. HEPA vacuum area after it is dried.</p> <p>Personal Protective Equipment (PPE) Minimum: Gloves, goggles/eye protection and an N-95 respirator. Limited: Gloves, half-face, or full-face air purifying respirators (APRs) equipped with P100 filter cartridges, disposable overalls, goggles/eye protection. Full: Gloves, disposable full body clothing, head gear, foot coverings, full-face powered air purifying respirator (PAPR) equipped with a P100 filter.</p> <p>Containment Limited: Use polyethylene sheeting 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 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.</p>			

8.0 Common Cleaning Items

Many cleaning items required during the process of remediation may be obtained locally. None of the items listed below are specifically endorsed by NTX Enviro, they are simple being provided as a reference for the homeowner to determine the types of products that might be useful.

Personal Protective Equipment (PPE):

- Safety glasses
- Nitrile, natural rubber, polyurethane, neoprene, or Polyvinylchloride (PVD) gloves
- N-95 rated (or higher) respirator

Grease cutting detergents:

- Simple Green All-Purpose Cleaner
- Simple Green Heavy-Duty Cleaner
- Zep All Purpose Cleaner and Degreaser
- Zep Industrial Purpose Degreaser

Antimicrobial / cleaners:

- Concrobium Mold Control
- Mold Armor Mold & Mildew Killer

Encapsulation products:

- Kilz Mold & Mildew Sealer
- Zinsser Mold Killing Primer

Equipment as needed (available through Sunbelt Rentals and others):

HEPA vacuum: a vacuum cleaner which has been designed with a High Efficiency Particulate Air (HEPA) filter as the last filtration stage. A HEPA filter is a filter that is capable of capturing particulates of 0.3 microns with 99.97% efficiency. The vacuum cleaner must be designed so that all the air drawn into the machine is expelled through the HEPA filter with none of the air leaking past it. HEPA vacuums must be operated and maintained in accordance with the manufacturer's instructions.

Air Filtration Device: depending on the mode of use, an AFD that filters (usually HEPA) and recirculates air is referred to as an air scrubber. One that filters air and creates negative pressure is referred to as a negative air machine.

Dehumidifier: an appliance for removing moisture from the air and lowering humidity levels.

Air mover: an essential tool for water restoration jobs. Offer high-velocity airflow improving air circulation to speed up evaporation and reduce drying times.

9.0 Consumer Mold Information Sheet

The Consumer Mold Information Sheet is available for download on the Texas Department of Licensing and Regulation website at <https://www.tdlr.texas.gov/mlr/pdf/CMIS.pdf>



TEXAS DEPARTMENT OF LICENSING & REGULATION

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CONSUMER MOLD INFORMATION SHEET

State rules require licensed mold assessors and remediators to give a copy of this Consumer Mold Information Sheet to each client and to the property owner, if not the same person, before starting any mold-related activity [16 TAC 78.70].

How does Texas regulate businesses that do testing for mold or that do mold cleanup?

The Department of Licensing and Regulation (TDLR) regulates such businesses in accordance with the [Texas Occupations Code, Chapter 1958](#). Under the **Texas Mold Assessment and Remediation Rules (rules)** ([16 Tex. Admin. Code, Chapter 78](#)), all companies and individuals who perform mold-related activities in Texas must be licensed by TDLR unless exempt. (See Page 2 regarding owner exemptions.) Individuals must meet certain qualifications, have required training, and pass a state exam and criminal history background check in order to be issued a license. Applicants for a mold remediation worker registration must have training and pass a criminal history background in order to be registered by TDLR. Laboratories that analyze mold samples must also be licensed and meet certain qualifications. The rules set minimum work practices and procedures and also require licensees to follow a code of ethics. To prevent conflicts of interest, the rules also prohibit a licensee from conducting both mold assessment and mold remediation on the same project. While the rules regulate the activities of mold licensees when they are doing mold-related activities, the rules do not require any property owner or occupant to clean up mold or to have it cleaned up.

How can I know if someone is licensed?

A licensed individual is required to carry a current TDLR license certificate with the license number on it. A search tool and listings of currently licensed companies and individuals can be found at: <https://www.tdlr.texas.gov/LicenseSearch/>.

What is "mold assessment?"

Mold assessment is an inspection of a building by a **mold assessment consultant** or **technician** to evaluate whether mold growth is present and to what extent. Samples may be taken to determine the amount and types of mold that are present; however, sampling is not necessary in many cases. When

mold cleanup is necessary a licensed mold assessment consultant can provide you with a **mold remediation protocol**. A protocol must specify the estimated quantities and locations of materials to be remediated, methods to be used and clearance criteria that must be met.

What is meant by "clearance criteria?"

Clearance criteria refer to the level of "cleanliness" that must be achieved by the persons conducting the mold cleanup. It is important to understand and agree with the mold assessment consultant prior to starting the project as to what an acceptable clearance level will be, including what will be acceptable results for any air sampling or surface sampling for mold. There are no national or state standards for a "safe" level of mold. Mold spores are a natural part of the environment and are always present at some level in the air and on surfaces all around us.

What is "mold remediation?"

Mold remediation is the cleanup and removal of mold growth from surfaces and/or contents in a building. It also refers to actions taken to prevent mold from growing back. Licensed **mold remediation contractors** must follow a mold remediation protocol as described above and their own **mold remediation work plan** that provides specific instructions and/or standard operating procedures for how the project will be done.

Before a remediation project can be deemed successful, a mold assessment consultant must conduct a **post-remediation assessment**. This is an inspection to ensure that the work area is free from all visible mold and wood rot, the project was completed in compliance with the remediation protocol and remediation work plan, and that it meets all clearance criteria that were specified in the protocol. The assessment consultant must give you a **passed clearance report** documenting the results of this inspection. If the project fails clearance,

further remediation as prescribed by a consultant will be necessary.

What is a Certificate of Mold Damage Remediation?

No later than the 10th day after a mold remediation project stop date, the remediation contractor must sign and give you a **Certificate of Mold Damage Remediation**. The licensed mold assessment consultant who conducted the post-remediation assessment must also sign the certificate. The consultant must truthfully state on the certificate that the mold contamination identified for the project has been remediated and whether the underlying cause of the mold has been corrected. (That work may involve other types of professional services that are not regulated by the mold rules, such as plumbing or carpentry.) Receiving a certificate documenting that the underlying cause of the mold was remediated is an advantage for a homeowner. It prevents an insurer from making an underwriting decision on the residential property based on previous mold damage or previous claims for mold damage. If you sell your property, the law requires that you provide the buyer a copy of all certificates you have received for that property within the preceding five years.

How is a property owner protected if a mold assessor or remediator does a poor job or damages the property?

The rules require licensees to have commercial general liability insurance in the amount of at least \$1 million, or to be self-insured, to cover any damage to your property. Before hiring anyone, you should ask for proof of such insurance coverage. You may wish to inquire if the company carries additional insurance, such as professional liability/errors and omissions (for consultants) or pollution insurance (for contractors), that would provide additional recourse to you should the company fail to perform properly.

How is my confidentiality protected if I share personal information about myself with a company?

Under the code of ethics in the rules, to the extent required by law, licensees must keep confidential any personal information about a client (including medical conditions) obtained during the course of a mold-related activity. Further, you may be able to negotiate a contract to include language that other personal information be kept confidential unless disclosure "is required by law." However, licensees are required to identify dates and addresses of projects and other details that can become public information.

How do I file a complaint about a company?

Anyone who believes a company or individual has violated the rules can file a complaint with TDLR. For information on this process, call 1-800-803-9202, or complete the online complaint form at <https://www.tdlr.texas.gov/complaints/>.

Can property owners do mold assessment or remediation on their own property without being licensed?

Yes. A homeowner can take samples for mold or clean it up in the home without a license. An owner, or a managing agent or employee of an owner of a residential property is not required to be licensed, **unless** the property has 10 or more residential dwelling units. For non-residential properties, an owner or tenant, or a managing agent or employee of an owner or tenant, is not required to be licensed to do mold assessment or remediation on property owned or leased by the owner or tenant, **unless** the mold contamination affects a total surface area of 25 contiguous square feet or more. Please refer to 16 TAC §78.30 for further details on exceptions and exemptions to licensing requirements.

For more information about mold and the Texas Mold Assessment and Remediation Rules, contact:
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