

SRM CONSTRUCTION

WATER INTRUSION AND MOLD REMEDICATION PLAN

PREFACE

The purpose of this plan is to define how the management and employees of SRM Construction will respond to water intrusions and the potential mold growth it can cause.

Plan Objectives include the following:

Prevent moisture and water intrusions to eliminate possible mold problems before they develop.

Facilitate a timely response when a problem is discovered. Minimize damage caused by mold and water intrusion.

Define work practices that will ensure proper mold remediation and elimination of water intrusions.

Keep SRM Construction properties safe and secure for employees and customers.

The following plan and all related procedures are approved by the president and senior management of SRM Construction, effective the date signed below.

Trevor Ashenbrener
President

Date

Risk Manager

Date

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PREVENTION

Minimizing the cost of mold damage starts with prevention. Because it is a primary factor in mold development, controlling moisture is essential for mold control. Address moisture problems in their early stages to eliminate the potential for mold growth:

Operations

- Fix leaky plumbing and leaks in the building envelope as soon as possible.
- Watch for condensation and wet spots. Fix the sources of all moisture problems as soon as possible.
- Prevent moisture due to condensation by increasing the surface temperature or reducing the moisture level in air (humidity). To increase the surface temperature, insulate or increase air circulation. To reduce the moisture level in air, repair leaks, increase ventilation if the outside air is cold and dry, or dehumidify if the outdoor air is warm and humid.
- Keep heating, ventilation, and air conditioning (HVAC) drip pans clean, flowing properly, and unobstructed.
- Vent moisture-generating appliances, such as dryers, to the outside where possible.
- Maintain low indoor humidity, below 60 percent relative humidity (RH), and ideally 30 to 50 percent, if possible.
- Perform regular building and HVAC inspections and maintenance as scheduled.
- Clean and dry wet or damp spots within 48 hours.
- Don't let foundations stay wet. Provide drainage and slope the ground away from the foundation.

Defined Construction Related Issues

- Install exterior walls or storefront systems on an 8" curb for slab on grade type projects.
- Pour gypcrete before drywall if permitted by design and AHJ.
- Gypcrete after paint, if possible.
- Shim cabinets with plastic shims.
- Ventilate building following gypcrete – crack windows and use fans for 10 days following gypcrete or until gypcrete has sufficiently cured.
- Ventilate building following drywall taping activities until mud has fully cured.
- Install moisture resistant drywall in any wet location where plumbing will be installed.
- Install moisture resistant drywall for all pre rock work done before the building is 100% dried in.
- Install foam/barrier between gypcrete and drywall to prevent moisture from absorbing into sheet rock.
- Test wood for MC content prior to closing with drywall especially at concrete levels where standing water may have pooled.

RESPONSE

When a water intrusion is discovered, an immediate response is necessary to prevent mold from developing. As a general rule, a response should be underway within the first 24 to 48 hours.

If mold has already begun to grow by the time a water intrusion is discovered, it is important that it is addressed quickly. Waiting to start remediation can allow for mold growth to increase, threatening employee health and causing additional property damage.

Identify and Eliminate the Moisture Source

Before beginning cleanup, the source of the water or moisture must be identified and eliminated. If not addressed, the cause of the water intrusion can hamper cleanup efforts and greatly increase—if not guarantee—the chance that the situation will repeat itself in the future.

Planning Remediation

Before beginning the cleanup process, take time to establish a remediation plan. A remediation plan should do the following:

- Asses the scope of the problem.
- Define how the cause of the water or moisture will be eliminated.
- Define the cleanup methods to be used.
- Cover the appropriate personal protective equipment (PPE) needed for remediation work.
- Address any health-related concerns for those that may be living or working in the area and are not directly involved in the cleanup efforts.

For larger jobs requiring more than two or three employees, it may help to assign an incident manager to oversee the project. The plan does not have to be an official or in-depth document but should provide simple answers to the bullet points laid out above so it can be referred to throughout the process.

Remediation

After the water or moisture source has been identified and a plan has been established, the cleanup process can begin. The Environmental Protection Agency (EPA) has developed guidelines, broken into two tables, which help identify the proper work practices based on your situation.

Table 1

If water intrusion is discovered at an early enough stage (within the first 24 to 48 hours), it may be possible to avoid the need for mold remediation. This requires immediate action to remove wet materials and sufficiently dry an area quickly and thoroughly. For guidance in this situation refer to EPA Table 1.

Table 2

If mold has already begun to develop, the cleanup process becomes more complicated. Proper practices must be used to ensure the health of employees as well as the complete remediation of mold. For guidance in this situation refer to EPA Table 2.

EPA Table 1

The following table was developed by the EPA to act as a guide when responding to water damage within the first 24-48 hours of an incident. These guidelines help eliminate the primary causes of mold growth before it can start, reducing the chances that future mold remediation will be needed.

Water-Damaged Material	Actions
Books and papers	<ul style="list-style-type: none"> • For non-valuable items, discard books and papers. • Photocopy valuable or important items. Discard the originals. • Freeze if in a frost-free freezer or meat locker or freeze-fry.
Carpet and backing – dry within 24 to 48 hours	<ul style="list-style-type: none"> • Remove water with a water extraction vacuum. • Reduce ambient humidity levels with a dehumidifier. • Pull up corners. • Accelerate the drying process with a fan.
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 a water extraction vacuum. • Accelerate the drying process with dehumidifiers, fans, and/or heaters.
Fiberglass insulation	<ul style="list-style-type: none"> • Discard and replace.
Hard surface, porous flooring (e.g., 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 underflooring is dry and dry underflooring if necessary.
Non-porous, hard surfaces (e.g., 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 a water extraction vacuum. • Accelerate the drying process with dehumidifiers, fans and/or heaters. • It may be difficult to completely dry within 48 hours. If the piece is valuable, you may wish to consult a restoration or water damage professional who specializes in furniture.
Wallboard (e.g., 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 manufacturer.
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 a mild detergent and clean water and allowed to dry. • Wet paneling should be pried away from the wall for drying.

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 any doubt. Note that mold growth will not always occur after 48 hours, this is only a guideline.

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 PPE and containment are required by the Occupational Health and Safety Administration (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.

EPA Table 2

Table 2 is designed to ensure proper remediation while also protecting the health and safety of those employees working on remediation efforts. It focuses on remediation for materials that have or are likely to have mold growth.

In cases when particular toxic forms of mold have been identified or are suspected, when chances that mold may be airborne are high or when mold growth may extend inside walls or HVAC systems, remediation may no longer be able to be performed by in-house personnel. If you are not comfortable handling the cleanup yourself an experienced mold remediator should be contacted.

Material or furnishing affected	Cleanup methods †	PPE	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 (e.g., linoleum, ceramic tile, vinyl)	1, 2, 3		
Non-porous, hard surfaces (e.g., plastics, metals)	1, 2, 3		
Upholstered furniture and drapes	1, 3		
Wallboard (e.g., drywall and gypsum board)	3		
Wood surfaces	1, 2, 3		
Medium – total surface area affected between 10 and 110 (ft²)			
Books and papers	3	Limited or full Use professional judgment. Consider the potential for remediator exposure and the size of the contaminated area.	Limited Use professional judgment. Consider the potential for remediator and occupant exposure and the size of the contaminated area.
Carpet and backing	1, 3, 4		
Concrete or cinder block	1, 3		
Hard surface, porous flooring (e.g., linoleum, ceramic tile, vinyl)	1, 2, 3		
Non-porous, hard surfaces (e.g., plastics, metals)	1, 2, 3		
Upholstered furniture and drapes	1, 3, 4		
Wallboard (e.g., 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 the potential for	Full Use professional judgment. Consider the potential for remediator and occupant exposure
Carpet and backing	1, 3, 4		
Concrete or cinder block	1, 3		
Hard surface, porous flooring (e.g., linoleum, ceramic tile, vinyl)	1, 2, 3, 4		

Non-porous, hard surfaces (e.g., plastics, metals)	1, 2, 3	remediator exposure and the size of the contaminated area.	and the size of the contaminated area.
Upholstered furniture and drapes	1, 2, 4		
Wallboard (e.g., drywall and gypsum board)	3, 4		
Wood surfaces	1, 2, 3, 4		

* Use professional judgment to determine prudent levels of PPE 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 PPE, 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 OSHA requires PPE and containment. An experienced professional should be consulted if you or your remediators do not have expertise in remediating contaminated water situations.

† Select the method most appropriate to the 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 or water damage remediation expert. Please note that these are guidelines; other cleaning methods may be preferred by some professionals.

Cleanup Methods

Method 1—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. Steam cleaning may be an alternative for carpets and some upholstered furniture.

Method 2—damp wipe: Whether dead or alive, mold is allergenic, and some molds may be toxic. Mold can generally be removed from nonporous or hard surfaces by wiping or scrubbing with water, or water and detergent except wood, where wood floor cleaner should be used instead. It is important to dry these surfaces quickly and thoroughly to discourage further mold growth. Instructions for cleaning surfaces, as listed on product labels, should always be read and followed. Porous materials that are wet and have mold growing on them may have to be discarded. Since molds will infiltrate porous substances and grow on or fill in empty spaces or crevices, the mold can be difficult or impossible to remove completely.

Method 3—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 the cleanup of dust that may have settled on surfaces outside the remediation area. Care must be taken to ensure that the filter is properly seated in the vacuum so that all the air must pass through the filter. When changing the vacuum filter, remediators 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.

Method 4—discard: Building materials and furnishings that are contaminated with mold growth and are not salvageable should be double-bagged using 6-millimeter polyethylene sheeting. These materials can then usually be discarded as ordinary construction waste. It is important to package mold-contaminated materials in sealed bags before removal from the containment area to minimize the dispersion of mold spores throughout the building. Large items that have heavy mold growth should be covered with polyethylene sheeting and sealed with duct tape before they are removed from the containment area.

Personal Protective Equipment

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

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

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

Containment

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

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

Please note that Table 1 and Table 2 contain general guidelines. Their purpose is to provide basic information for remediation managers to first assess the extent of the damage and then to determine whether the remediation should be managed by in-house personnel or outside professionals. The remediation manager can then use the guidelines to help design a remediation plan or to assess a plan submitted by outside professionals.