

STURZENBECKER CONSTRUCTION COMPANY

Company policy for the control of mold at new and remodel construction projects

At Sturzenbecker Construction Company it is every employee's obligation to provide our clients with good quality, long lasting products. Our normal construction practices provide good protection against the growth of mold, however mold spores are everywhere and we cannot eliminate them from the construction site. What we can do is control those factors that promote the growth of mold; these are air, food and water. The information in this document will help you better understand how important some of our normal construction methods are in controlling mold and present some guidelines for mold control in areas that will be at high risk after the project is complete.

As construction professionals there is nothing we can do to eliminate mold spores or the oxygen they need to flourish. We can control the moisture that mold requires to grow and to some extent its food sources. While controlling food sources is often constrained by our client's budget or architectural considerations, there are some things we can do, but mostly concentrate on controlling moisture. Since interior remodel is a large portion of our business we will first review the construction requirements that are applicable. These same requirements also apply to the latter stages of new construction. Later we will review construction requirements that are specific to new construction.

Remodel

1. Cleanliness

- a. Establish a lunch/break area that is easy to police and away from construction materials.
- b. Do not allow organic debris such as sawdust, soil, food wrappers or drink containers to accumulate around stored construction materials.
- c. Remove all organic debris from walls cavities regularly. Make sure that wall cavities are clean before installing insulation or drywall.
- d. Do not receive or use materials that show signs of moisture damage and/or evidence of active mold.

2. Storage

- a. Schedule your materials to arrive as shortly as possible before they are to be installed.
- b. Store materials in a dry area, preferably climate controlled.
- c. Materials must be stored flat, up off the floor or ground on dunnage, so that air can circulate around and under them. Never store materials such as lumber, plywood, drywall, etc. directly on the floor and never store them leaning against walls or framing.
- d. If you must store materials outside, locate them in a sunny area and cover them with a plastic sheet or tarp, up on dunnage. Leave the plastic cover open at the bottom to allow air to circulate under the materials.

3. Construction

a. Concrete

- i. Never place concrete over damp fill or backfill.
- ii. At floor cuts and other slab on grade concrete repairs, replace vapor barrier with same as original or as directed by an engineer. (Minimum 6 mil poly placed over dry compacted fill).
- iii. Allow adequate drying time for freshly placed concrete before enclosing framing or installing floor covering over it. Use field test or hire independent moisture emission tests if necessary. (Minimum 7 days dry/cure time under ideal conditions)
- iv. Caulk all penetrations through slab on grade concrete.

b. Wood

- i. Never install untreated lumber directly in contact with concrete.
- ii. Install a thermal break under the bottom plate of cold walls. (Foam sill sealer is adequate)
- iii. Inspect all wood framing material for mold growth and dampness prior to installation and before closing up walls or other hidden framing.
- iv. In areas subject to intermittent climate control, poor air circulation or high humidity/moisture, consider an alternate framing material.

c. Drywall

- i. Drywall should be installed with the tapered edge down and raised a minimum of 1/2" up off the floor. Drywall should never be installed with the butt end or a cut edge at the floor.
- ii. Drywall butt joints and cut edges should be minimized in moisture prone and high humidity areas such as wet-walls in bathrooms, mechanical rooms, janitor closets, food preparation areas, etc..
- iii. Always maintain the integrity of the face paper and backing paper of the drywall at penetrations and cut edges. (The paper is an integral part of the wall system)
- iv. Where drywall cut edges, penetrations or butt joint must occur in moisture prone and high humidity areas the edges of the drywall should be coated with the drywall manufacturer's recommended sealant.
- v. Use fans and other methods to promote air circulation during the drywall finishing stage of construction. The object here is to thoroughly dry mud joints and textured finishes and also reduce the amount of time that the adjacent drywall board has to absorb moisture from those processes. If additional heat is required, avoid using natural gas or fuel oil fired space heaters, the combustion process of these types of heaters introduces tremendous amounts of moisture into the air.

- vi. In areas subject to intermittent climate control, poor air circulation or high humidity/moisture, use mold resistant drywall. (Mold resistant drywall can be used in areas where a moisture resistant drywall is required) (**Moisture resistant drywall, commonly referred to as “MR” or “green board”, is not mold resistant.**)
 - vii. In areas where the subsurface soil conditions are suspected to cause slab on grade floors to become periodically damp and where those conditions are beyond the scope of work to mitigate, use mold resistant drywall on the lower 4’ of walls (Mold resistant drywall is not stocked by most suppliers therefore it’s only available in full units and must be ordered well ahead of time).
- d. Ceiling tile
- i. Use only moisture and mold resistant ceilings tiles at exterior and high moisture areas.
 - ii. Schedule ceiling tiles to be delivered and installed only after the HVAC system is operational.
- e. Floor finishes
- i. Never install floor finishes over damp sub flooring/concrete. Use field test or hire independent moisture emission tests if necessary.
 - ii. On sub-floors that have been recently cleaned or striped using a liquid process, such as some asbestos abatement processes, be sure that all liquid is evacuated from floor boxes and conduits that are to be abandoned even if they are to be plugged with concrete. Also thoroughly dry sub-floor in areas around floor penetrations like ductwork and chases.
- f. Wall finishes
- i. Schedule wallpaper/vinyl to be delivered and installed only after the HVAC system is operational.
 - ii. Be certain that walls are uniformly and completely sized before installing wallpaper or vinyl wall covering.
 - iii. Vinyl wall covering should not be installed on the interior side of an exterior wall.
- g. Mechanical/Plumbing/Electrical
- i. Ventilation and bath fan ducts should be insulated from a minimum of 5’ downstream in unconditioned attic spaces, with drip pans installed below roof penetrations.
 - ii. Verify that interior rain leaders, cold water supply lines and condensate lines above ceilings or to be in enclosed in walls or chases are insulated with pipe insulation per the job specifications, if required.
 - iii. Thicken concrete slab to maintain a minimum of 3” of concrete under floor boxes in slab on grade floors.

New construction

4. Site

- a. Footing excavations are usually open for an extended period, so unless the weather is expected to remain dry until the foundation walls are backfilled and compacted the excavation should be day-lighted if possible, if not a runoff water collection area should be created outside of the building pad that the footing excavation can drain into.
- b. Schedule utility excavations to minimize the time that the trench is open.
- c. Establish positive drainage away from the foundation as soon as possible and absolutely before framing or above grade masonry work begins. Maintain a minimum slope of 1" in 12" for at least 10' out from the foundation, remember to begin far enough down from the top of slab/foundation to allow for the placement of finish grade material such as topsoil, mulch, etc. (Finish grade is generally 4½" to 6" below the top of slab/foundation, refer to your construction documents to be sure of the finish grade.)
- d. Install footing drains where ground water is present or likely to be present at or above the bottom of the footing or as directed by your construction documents. Footing drains should be installed outside the footing line with the bottom of the drain no higher than the bottom of the footing and sloping down from there to the storm sewer connection at a minimum fall of 1" in 10'. If the footing drain is to be backfilled with drain rock do not install drain rock above the top of the footing. Never install footing drains or drain rock on top of the footings or against the foundation wall.

5. Structure (prior to dry-in)

- a. Install vapor barrier under slab on grade concrete or in crawl space over clean, level compacted fill (no organic material) lap the vapor barrier a minimum of 2' or else lap 6" and tape the seams. In a crawl space install vapor barrier prior to installing floor decking. (Minimum 6 mil poly or per your construction documents).
- b. Maintain adequate clearance in crawl space for ventilation (minimum 14" clear below the bottom of the lowest structural member, such as a floor joist support beam).
- c. Install vapor barrier over exterior sheathing and roof sheathing immediately as each section is completed (a minimum of 30# building felt lapped a minimum of 6" or per your construction documents).
- d. At the top and sides of any self-flashing penetrations through exterior sheathing the vapor barrier should be lapped over the flanges and it should be under the flange at the bottom. Examples of self-flashing penetrations are; plumbing vent boots, most roof mounted attic vents, and doorframes and windows if they have an integral face-nailing flange.

- e. Install flashing at the top of any penetrations through the exterior sheathing that are not self-flashing, the vapor barrier should be lapped over the vertical leg of the flashing and the penetration should be caulked to the exterior sheathing at the bottom and sides (use backer rod to fill any large voids prior to caulking). Examples of penetrations that are not self-flashing are; PTAC sleeves, set in windows, doorframes and storefronts. (Note: most storefronts have a built-in drainage system, be careful to not caulk the drain holes or drain pan at the bottom).
 - f. Masonry veneer should have 24" wide vinyl flashing installed at the bottom of the wall and extending up underneath the moisture barrier of the exterior sheathing.
 - g. Masonry veneer should have 1/4" poly/cotton rope wicks installed in the lowest vertical joints at a maximum of 24" on center and extended up the face of the exterior sheathing moisture barrier a minimum of 18"
 - h. Maintain a minimum 1" air space between masonry veneer and exterior sheathing.
 - i. Remove rainwater and snow from sub-floor and thoroughly dry sub-floor and framing immediately.
6. Structure (after dry-in)
- a. Door and windows should be closed during inclement weather to avoid letting precipitation into the structure. They should also be closed overnight until the HVAC is operational because moist night air can cause dew to form on framing, drywall, insulation, etc.
 - b. Once the HVAC system is operational, windows and doors should be kept closed at all times to allow the temperature and humidity to remain stable.
 - c. Do not stock or install insulation or drywall board before the structure is 100% dried-in.
 - d. If an area must be pre-rocked, that area should be protected from inclement weather and ample air circulation must be maintained. Examples of areas that might need to be pre-rocked are elevator shafts, STC walls and firewalls.
 - e. Ceiling and exterior wall insulation should fill all voids. Areas that need special attention are building corners, where interior walls intersect the exterior wall and around door and window frames.
 - f. If wood floor decking is to receive Gypcrete or a similar lightweight concrete product as a self-leveling sub-floor, the decking should be sealed.
 - g. Use a sealer on the bottom edge of drywall board in areas where the floor is to receive Gypcrete or a similar lightweight concrete product.
 - h. Test exterior walls, roofing and flashing for leaks prior to installing any insulation or finish materials.
7. Documentation
- a. To document due diligence to control mold maintain a daily log that includes the following:
 - i. A record of the weather including sky, wind, humidity, precipitation and high/low temperatures.

- ii. A description of work performed.
 - iii. A list of materials received and their disposition.
- b. If an engineer's opinion or third party testing is required always obtain the results in writing.
- c. If you think that corrective action, which is beyond the scope of work, may be required you should consult with your Sturzenbecker Construction Company supervisor, if your supervisor agrees then the client should be informed in writing.

Your best defense against mold is to follow good construction practices and the guidelines above. Be vigilant and use your best judgment, but most of all rely of your project manager, if you have even the slightest doubt as to how to proceed let your project manager make the decision.

The foregoing is aimed at preventing mold and mildew from gaining a foothold on our construction projects. Despite our best efforts we must still be prepared for the worst, if you observe any leaks in the exterior systems of your building or the growth of any mold or mildew, notify your project manager immediately and correct the problem as soon as practical, but no later than 5 days after detection, The longer this type of problem persists the more serious and expensive it will become.