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Mold in Construction Checklist

St. Paul Fire & Marine Insurance Company, St. Paul, MN

Pre-job Tasks

- Project management and workers trained in importance and methods of preventing mold growth.
  - Keep interior materials dry –prior to, during and after installation
  - Do not install wet building materials
  - Report any water damage, leaks or intrusion to project manager immediately
  - Dry out any water damaged materials as soon as possible
  - Build in strict accordance with designs and specifications
  - Immediately alert architects to designs that may allow water intrusion or moisture accumulation
  - Question “conceptual only,” inadequate architectural detailing or outright improper building plans
- During the design phase, carefully review the details with specific attention to ensuring an impermeable envelope.

- Consult an envelope engineer on geometrically complex buildings for a third party opinion on the water tightness of the envelope.

- On a renovation or addition, carefully survey the existing building before construction begins. Look for discoloration in finished surfaces or a musty smell. It is possible that a pre-existing mold problem can become the contractor’s problem once construction begins.

- Develop the project schedule with envelope construction completion as a predecessor to installation of finishes. This may be impossible on some projects; if so, have a detailed weather protection plan for all areas of exposure and establish a sufficient budget to implement the plan.

- Establish a partnering program with the owner and promote a peer review for the mechanical system and the building envelope designs.

- Carefully document any recommended changes to the Architect of Record. On standard Owner-Architect-Contractor project delivery methods, the Architect's approval must be obtained. In the event the recommendation is rejected, reiterate the recommendation in writing, copy the owner and file it.

- Pre-qualify potential subcontractors and ensure that the subs have adequate experience in the specific application being bid.

- Consult manufacturers of moisture critical products to confirm the product's application and recommend standard details, and provide preferred installers.

- Delivery of interior materials (e.g. dry wall, paneling, ceiling tiles, framing lumber):
  - Schedule so materials will arrive after exterior of building has been sealed
  - Provide for dry storage of materials – off ground away from moisture sources
  - Minimize storage time
  - Plastic sheeting or tarps used to cover materials are secured loosely to allow air circulation

- Pre-arrange for drying equipment
  - Fans
  - Dehumidifiers
  - Wet-Dry vacuums
  - "Super sucker" trucks

During Construction Checks

- All materials inspected upon delivery for pre-existing mold contamination

- Interior materials installed in dry condition – per manufacturers' specifications

- All water services (including fire sprinklers) and waste lines checked for:
  - Proper installation
  - Connections properly made and checked for leakage
  - Water lines (particularly chilled water) properly insulated
  - Have multiple inspectors for filling or hydro test of sprinklers

- All building penetrations properly installed and checked for leakage:
  - Doors
  - Windows
  - Balconies and decks
  - Roof membranes – lapping at corners and joints
  - Ventilation/exhaust ducts

- All tears, openings or punctures in vapor barriers have been repaired

- All flashings and caulking checked for proper lapping and application

- All roof drains drain away from the foundation

- Roof drains properly supported and braced for large volume storms

- All moisture-generating equipment vented outdoors

- Surrounding ground sloped away from foundation

- Proper ventilation to attics, crawl spaces or other enclosed areas

- HVAC system
  - Correct filters properly installed – ASHRAE Dust Spot Efficiency per specifications, no filters missing or misaligned
  - Drip pan for cooling coils drains properly
  - No insulation on interior of ventilation ducts – bare, galvanized sheet metal preferred
  - All duct joints sealed
  - The system is cleaned and commissioned. Third party certification of HVAC (test and balance report). The American Society of Heating Refrigerating and Air Conditioning Engineers has published a good practice commissioning procedure (ASHRAE Guide #1).

- Documentation of critical installations, including photographs

- Use EIFS installers that follow performance standards, specification, and methods of application guidelines from the EIFS Industry Members Association. (www.eima.com)

- Perform interim inspections; invite the Architect, Envelop Engineer, Mechanical Engineer, manufacturer's representatives to inspect for mold related issues

Post-Construction Checks

- Have manufacturers inspect installations for warrantee purposes
- Facility owner briefed on their responsibilities to prevent mold growth
- Fix leaky plumbing and leaks in the building envelope as soon as possible.
- Watch for condensation and wet spots. Fix source(s) of moisture problem(s) as soon as possible.
- 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).
- Keep heating, ventilation and air conditioning (HVAC) drip pans clean, flowing properly and unobstructed
- Vent moisture-generating appliances, such as dryers, to the outside when possible
- Maintain low indoor humidity, below 60 percent relative humidity (RH), ideally 30-50 percent, if possible
- Perform regular building/HVAC inspections and maintenance as scheduled
- Install and maintain proper air filters
- 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
- Ensure new building penetrations are properly sealed
- Landscape watering system does not spray building foundation
- Final visual inspection of:
  - Pipe chases
  - Utility tunnels
  - Areas above drop ceilings that are exposed to water or waste lines or that are directly below roof