NYCHA MOLD TRAINING

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Welcome back NYCHA Staff

- This training is presented by EEA under contract to NYCHA
- EEA is an accredited asbestos, lead & mold training provider
- We look forward to working with you to provide this very important training
- It's critical to public housing in NYC
- NYCHA succeeds when YOU succeed!
- General Manager's Intro

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Welcome NYCHA Staff

- Registration & sign-in/out
- Training materials
- Training Agenda
- Training Goals
  - Understand importance of controlling mold & moisture
  - Be able to use the tools, practices & procedures
  - Be ready to get this done!

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Public (Housing) Enemy #1

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Why Are We Here Today?

- Exposures from residential excessive moisture and mold have been associated with increased risks for respiratory symptoms, asthma, hypersensitivity pneumonitis, rhinosinusitis, bronchitis, and respiratory infections.
- NYCHA staff must take action to detect and correct leaks, condensation problems, and floods as soon as they are discovered. The potential for building structural damage, mold growth, and increased adverse health effects can and must be reduced by limiting the build-up of indoor moisture.

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NYCHA Facilities

- 2,413 buildings in 325 developments over five boroughs; 769 facilities; 177,666 apartments; 404,000 residents
- 70 percent of NYCHA buildings built before 1969.
- Building materials that can be affected by mold & moisture include:
  - Plaster
  - Drywall
  - Wood studs/framing
  - Cabinets
  - Caulking & grout

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Preventing Mold In NYCHA

- Mold growth is always associated with excessive moisture problems.
- How do we **prevent** or **control** excessive moisture and what are the **Root-Causes** of excessive moisture?

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Where Does Mold Grow in NYCHA?

- The paint on plaster, concrete, and sheetrock walls/ceilings
- The paper covering of sheetrock walls/ceilings (front/back and top/bottom sides)
- The covering of pipe-wrap insulation in wall cavities
- Bathroom tile grout and caulking
- Kitchen and bathroom cabinetry
- Wood framing materials in wall cavities

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Mold Root Causes

The fundamental reason(s) for the occurrence of mold, water damage or moisture.

- Identify and select the most correct root cause(s) to ensure the condition does not reoccur – up to four (4) can be selected.
- Root cause(s) might often be not visible at first and require a comprehensive investigation to identify.

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Mold Root Causes – Changes Overview

Twenty-nine (29) Root Causes are organized by five (5) general categories how the problem was caused.

I. Sealant Related Issues – Issues that can be resolved by removing and replacing old caulking.
Example: Caulking around a bathtub.

II. Leak Issues – Issues caused by a leak other than an sealant issue.
Example: Crack in exterior (façade) is causing a water enter the unit.

III. Resident-Caused – Issues that can be prevented due to adjustments to resident education and behavior.
Example: Resident is not opening a window after a shower.

IV. Ventilation – Issues that are a result of inoperable roof fans and/or lateral duct issues.
Example: A clog in the lateral duct is preventing air from flowing into the apartment.

V. Other – Issue(s) are being caused due to reasons outside of the four categories previously listed.
Example: Condensation (sweating on the pipes) due to the damaged or missing insulation.

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Shower Vapor Condensation

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Condensation on Cold Water Pipes In Wall Cavities

Missing insulation on cold water riser

Damaged insulation on cold water riser

Missing insulation on cold water supply t

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Toilet Condensation - In Apartment

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Perimeter Wall Condensation

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Toilet Condensation - From Above




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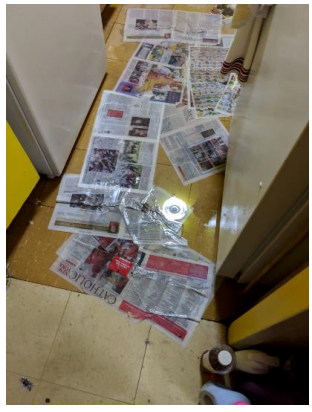
Plumbing Leaks/Flooding

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Roof Leaks

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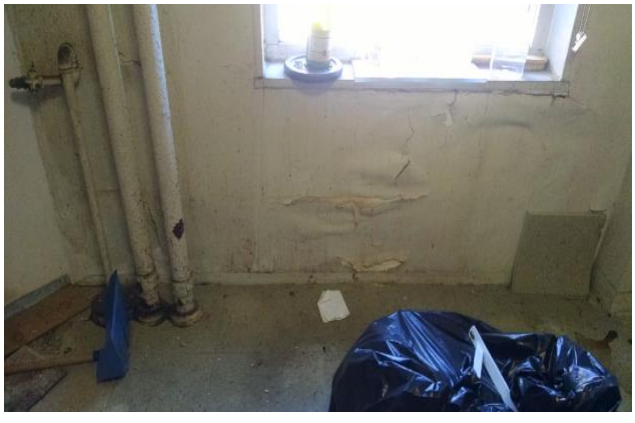
Façade Leaks



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Resident Related

- Boiling water or humidifier
- Not opening windows during/after shower
- Broken dishwasher
- Broken washing machine
- Blocked vent
- Other

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How Mold Grows

- Finds suitable conditions
  - Water
  - Food
  - Temp (hot or cold)
- Grows
- Spreads

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Localized Mold Contamination

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Major Mold Infestation

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Exposures To Residential Dampness And Mold

Associated with increased risks of;

- Respiratory symptoms
- Asthma
- Hypersensitivity pneumonitis
- Rhinosinusitis
- Bronchitis
- Respiratory infections.

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Allergic Responses

Asthma

- Molds can trigger asthma attacks in persons allergic (sensitized) to molds.
- Asthma is a major problem in New York City. In some low-income parts of New York City, as many as one in four children have asthma.
- What is asthma (Khan Academy)

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Irritant Effects

Mold exposure can irritate the eyes, skin, nose, throat, and lungs of both mold-allergic and non-allergic people.

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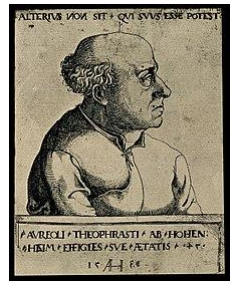
Degrees of Exposure

- **"The dose makes the poison"** (in Latin: ***sola dosis facit venenum***) – Paracelsus (1538 AD)
- a substance can produce the harmful effect associated with its toxic properties only if it reaches a susceptible biological system within the body in a high enough concentration
- Occupants or remediation workers disturbing large areas of mold growth face greater exposure potential, and thus, greater potential for adverse health effects.



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Common-Sense Approach

- **Small amounts of mold growth in homes and buildings are common occurrences, that for the majority of people present minimal health risks.**
  - The solution is to fix the moisture problem and clean up the mold quickly.
- **Large areas of mold growth present a more likely risk of exposure and adverse health effects for some people.**
  - Large areas of mold growth indicate more extensive water damage/moisture intrusion in the building.
  - Additional and more extensive measures should be used during remediation to protect both workers and occupants of the building.

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Health Issues for Workers

- Mold assessment and remediation employees with persistent health problems that appear related to mold should see a physician.
- Referrals to physicians trained in occupational, environmental or allergy medicine may be needed.

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Preventing Mold Growth

Simple Steps

- keep exterior moisture out of the building
- control moisture from internal sources

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Preventing Mold Growth

- It's important to establish a cooperative partnership between NYCHA staff and residents so that conditions that require attention are identified and dealt with promptly.
- NYCHA staff and residents should take action to detect and correct leaks, condensation problems, and floods as soon as they are discovered.
- The potential for building structural damage, mold growth, and increased adverse health effects can and should be reduced by limiting the buildup of indoor moisture.

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UPDATED - Top Ten Things NYCHA Staff Should Know About Mold & Moisture

1. Potential health effects and symptoms associated with exposures to mold and excessive moisture include allergic reactions, asthma, and other respiratory complaints.
2. Mold can be found almost anywhere; it can grow on virtually any substance if moisture is present. For example, there are molds that can grow on sheetrock, painted plaster and concrete, wood, paper, carpet, foods, and even dusty inorganic building materials
3. 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.
4. If mold is a problem in an apartment or building, we must clean up the mold and eliminate sources of moisture.
5. Fix the source of the water problem or leak to prevent mold growth, including repairing leaky roofs.

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Top Ten Things NYCHA Staff Should Know About Mold & Moisture

6. Reduce indoor humidity (to 30-60%) to decrease mold growth by: venting bathrooms and kitchens; using air conditioners and de-humidifiers; and increasing ventilation. Staff shall ensure that mechanical ventilation is functioning (clear lateral ductwork and operable roof fans). Further, staff can use a hygrometer to check the relative humidity in a resident's apartment
7. Clean and dry any damp or wet building materials and furnishings within 24-48 hours to prevent mold growth.
8. Clean minor levels off off hard surfaces with water and detergent, and dry completely. Absorbent materials, such as sheetrock, that are moldy will need to be replaced.

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Top Ten Things NYCHA Staff Should Know About Mold & Moisture

9. **Prevent condensation: reduce the potential for condensation on cold surfaces by assuring that cold water pipes in wall cavities are properly insulated.**
10. If needed as a result of asthma, individuals with mold and/or excessive moisture in their apartments are entitled to reasonable accommodations from NYCHA.

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Efflorescence

- Efflorescence is the residue that's left behind when water seeps through concrete, stone, or brick.
- Salt deposits leave a white residue that resembles mold.
- Won't grow or spread, and isn't a fungus.

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Golden Rule for Mold Exposure Safety

Minimizing mold-related exposures will reduce the possibility of health impacts on occupants and workers.

- As the potential for exposure increases, the need for protective measures increases.
- Workers can reduce exposure potential by proper use of personal protective equipment (PPE).
  - Respirators (Minimum N-95)
  - Gloves
  - Protective clothing
  - Goggles

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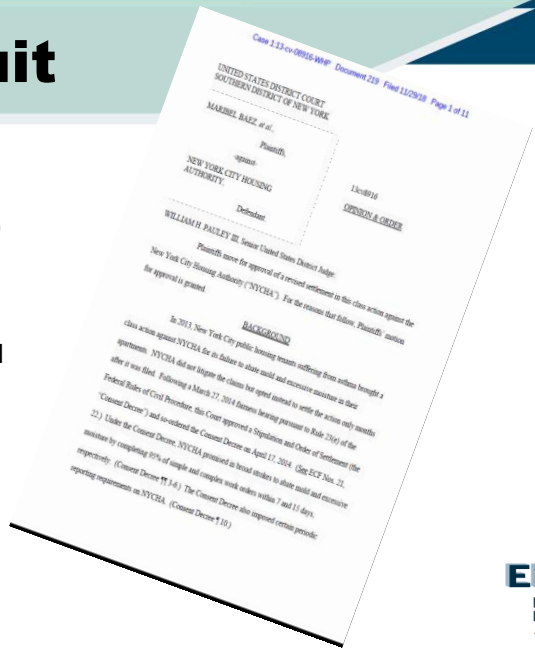
Baez Lawsuit

Maribel Baez vs NYCHA (“Baez”) is a class action lawsuit filed December 2013, as a violation the Americans with Disabilities Act for the conditions of mold and excessive moisturefor residents suffering from asthma.


Case 1:13-cv-08916-WHP Document 229 Filed 11/29/18 Page 1 of 11

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

MARIBEL BAEZ, et al.,

Plaintiffs,

-against-

NEW YORK CITY HOUSING AUTHORITY,

Defendant.

13cv8916

OPINION & ORDER

WILLIAM H. PAULEY III, Senior United States District Judge:

Plaintiffs move for approval of a revised settlement in this class action against the New York City Housing Authority ("NYCHA"). For the reasons that follow, Plaintiffs' motion for approval is granted.

BACKGROUND

In 2013, New York City public housing tenants suffering from asthma brought a class action against NYCHA for its failure to abate mold and excessive moisture in their apartments. NYCHA did not litigate the claims but opted instead to settle the action only months after it was filed. Following a March 27, 2014 fairness hearing pursuant to Rule 23(e) of the Federal Rules of Civil Procedure, this Court approved a Stipulation and Order of Settlement (the "Consent Decree") and so-ordered the Consent Decree on April 17, 2014. (See ECF Nos. 21, 22.) Under the Consent Decree, NYCHA promised in broad strokes to abate mold and excessive moisture by completing 85% of simple and complex work orders within 7 and 11 days, respectively. (Consent Decree ¶¶ 3-4.) The Consent Decree also imposed certain periodic reporting requirements on NYCHA. (Consent Decree ¶ 10.)

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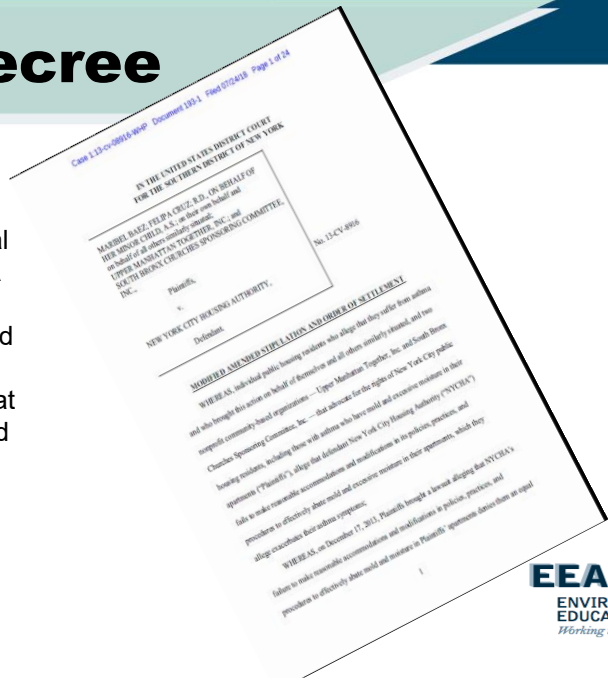
Consent Decree

- In partnership with the Special Master and Plaintiffs, NYCHA has revised its standard procedure for addressing mold complaints.
- These changes were piloted at 38 developments in 2017, and will be launching citywide in January 2019


Case 1:13-cv-08916-WHP Document 193-1 Filed 07/24/18 Page 1 of 24

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK

MARIBEL BAEZ, FELIPA CRUZ, R.D., ON BEHALF OF HER MINOR CHILD, A.S., on their own behalf and on behalf of all others similarly situated, and UPPER MANHATTAN TOGETHER, INC., and SOUTH BRONX CHURCHES SPONSORING COMMITTEE, INC.,

Plaintiffs,

v.

NEW YORK CITY HOUSING AUTHORITY,

Defendant.

No. 13-CV-8916

MODIFIED AMENDED STIPULATION AND ORDER OF SETTLEMENT

WHEREAS, individual public housing residents who allege that they suffer from asthma and who brought this action on behalf of themselves and all others similarly situated, and two nonprofit community-based organizations — Upper Manhattan Together, Inc. and South Bronx Churches Sponsoring Committee, Inc. — that advocate for the rights of New York City public housing residents, including those with asthma who have mold and excessive moisture in their apartments ("Plaintiffs"), allege that defendant New York City Housing Authority ("NYCHA") fails to make reasonable accommodations and modifications in its policies, practices, and procedures to effectively abate mold and excessive moisture in their apartments, which they allege exacerbates their asthma symptoms;

WHEREAS, on December 17, 2013, Plaintiffs brought a lawsuit alleging that NYCHA's failure to make reasonable accommodations and modifications in policies, practices, and procedures to effectively abate mold and moisture in Plaintiffs' apartments denies them an equal

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NYCHA Purpose

- Standard Procedures establish responsive measures to mold and its root causes in NYCHA public housing locations, and creates protocols to protect the health of residents and staff when remediating mold and identifying and correcting its root causes.

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Standard Procedures - Inspections

All inspection work must conform to the protocols in the following documents:

- GM 040:14:1, Mold/Mildew Control in NYCHA Residential Buildings
- NextGeneration NYCHA Informer Work Management (iWM) handheld application

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Standard Procedures - Remediation

All remediation & related maintenance work must conform to the protocols in the following documents:

- GM 040:14:1, Mold/Mildew Control in NYCHA Residential Buildings, including Appendix A – Remediation Methods
- SP 040:18:2 Revised, Maintenance Tasks – Dust Control and Clean Up in Apartments, which establishes Work Area Preparation/Performance Levels
- Interim Guidance on Wall Breaks
- Interim Guidance on Pipe Insulation

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Training Requirements

- Inspector (32 hrs) - Training on inspection tools and methods as well as conducting and documenting inspections
  - Directors, Neighborhood Administrators, Housing Managers, Resident Building Superintendents, and Assistant Resident Building Superintendents
- Building Sciences (16 hrs) - Training on identifying the root causes of mold and on the methods to correct the root causes to prevent the reoccurrence of mold.
  - Directors, Neighborhood Administrators, Housing Managers, Resident Building Superintendents, Assistant Resident Building Superintendents, and Maintenance Workers
- Remediation Methods (8 hrs) -Training on how to safely and effectively remediate mold and its root causes.
  - Skilled Trades, Painters, and Caretaker (P)

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Performance Metrics

- Average number of days to complete repairs and close mold work orders.
- Average number of days to complete initial inspections.
- Percent of mold work orders for reoccurring mold.

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Non-compliance

- If unsatisfactory work is identified during a quality assurance inspection in Section VIII.H, or at any other time, supervisory staff must take one or more of the following actions:
  - Identify areas for follow up training for the employee and ensure training is scheduled and provided.
  - Reinforce with the employee(s) the job expectations, accountabilities, and the progressive discipline process.
- Failure to comply with the requirements of this Standard Procedure may result in disciplinary actions.

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Quality Assurance Deficiencies

- As a result of a quality assurance review, NYCHA has found a small group of staff performance shortfall when it comes to mold inspections and remediation.

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Remediators Performance Shortfalls

- failure to use/properly use the anemometer and Testo app to measure exhaust vent output (bathrooms and kitchens)
- failure to use mold resistant paint as required based on the remediation methods and development construction
- failure to check/confirm that pipes are properly insulated when checking for excessive moisture/leaks in wall cavities
- failure to use/properly use the borescope to inspect wall cavities
- failure to ensure mold impacted surfaces are
  - 1. cleaned with the appropriate detergent solution/fungicide cleaner
  - 2. completely dry prior to moving forward in the mold remediation process.

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Office of Mold Assessment & Remediation (OMAR)

1. Monitor key development-level mold-related indicators including, but not limited to, parent mold work order completion time frames, and mold reoccurrence and unfounded inspection rates.
2. Perform random inspections at developments with high rates of mold reoccurrence or unfounded inspections and report findings to the neighborhood administrator.
3. Monitor the efficiency of mold work order scheduling and provide follow up recommendations to the neighborhood administrators or skilled trades deputy director, as applicable.

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Property Management

Property management department director shall:

a) Monitor key development-level mold-related indicators including, but not limited to, scheduled appointments, parent mold work order completion time frames, and mold reoccurrence and unfounded inspection rates.
b) Assign supervisory staff to perform random inspections at developments, as needed.

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Property Management

Neighborhood Administrators shall:

a) Monitor development property management operations and hold property managers and property maintenance supervisors accountable for monitoring all mold related work orders in Maximo and addressing conditions in compliance with protocols established for remediating mold and identifying and correcting root causes.
b) Investigate and respond to inspection reports prepared by centralized performance management staff.

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Property Management

The Property Management Department skilled trades deputy director shall

a. Monitor skilled trades administrators, borough schedulers, and skilled trades supervisors and hold them accountable for monitoring all mold-related work orders in Maximo and addressing conditions in compliance with protocols established for remediating mold and identifying and correcting root causes.
b. Respond to recommendations from the Office of Mold Assessment & Remediation.
c. Skilled trades administrators shall schedule skilled trades workers to complete complex repairs within 15 days.

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Property Management

The borough scheduler shall:

a. Assign in Maximo the property maintenance supervisor, assistant property maintenance supervisor, or property manager to work orders to conduct initial and quality assurance inspections.
b. Identify and schedule all work orders with the status of Waiting To Schedule and Failed to Schedule.
c. Reschedule appointments for mold related work orders as needed.
d. Coordinate the scheduling of skilled trades workers with the Property Management Department Planning Unit skilled trades administrator; the director of the Maintenance, Repair & Skilled Trades Department; and the Healthy Homes Lead Hazard Control Department Abatement and Clearance Unit.

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Property Management

Property manager shall:

a) Closely monitor the customer service delivery aspects of this Standard Procedure to ensure NYCHA's commitments to residents are addressed.

b) Work closely with the property maintenance supervisor to ensure that property management staff:

(1) Visit apartments for all mold work appointments as scheduled.

(2) Record resident outreach attempts in the Tenant Data System (TDS)

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Property Management

Property maintenance supervisor shall:

a. Conduct mold initial inspections and quality assurance inspections using mold-related tools and equipment.

b. Work closely with property maintenance staff to ensure that property maintenance staff:

(1) Accompany the property maintenance supervisor during initial inspections and quality assurance inspections, as required.

(2) Visit apartments for all mold work order appointments as scheduled.

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Property Management

The assistant property maintenance supervisor shall perform the tasks in Section 7.a-b directly above in addition to the property maintenance supervisor.

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Maintenance Staff

- Accompanies inspectors on the initial inspection, or to be on call, to immediately remediate mold and related conditions or to identify and correct root causes, when possible.
- Must bring an anemometer, a borescope and tools appropriate for making wall-breaks, and a HEPA vacuum. If a wall break is required, the inspector must conduct the wall break with the assistance of a maintenance worker as part of the initial inspection.
- Completes child work orders for vent cleaning, roof fan repairs and other maintenance tasks.
- All simple repairs must be completed within 7 calendar days from the date the parent mold work order was created.

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Skilled Trades Department

- Completes root cause repairs according to trade
- Utilizes Remediation Methods per SP 040:14:1 (Appendix A)
- Complex repairs must be completed within 15 calendar days from the date the parent mold work order was created.

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Lead Hazard Control Department

The supervisor of the Abatement and Clearance Unit shall oversee staff for large remediation jobs and coordinate scheduling work with Environmental Field Operations in MRST and the borough scheduler

NOTE: Once abatement work is complete, Property Management Department staff is responsible for coordinating and scheduling remaining repairs.

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All NYCHA Employees Performing Work in Apartments

Any employee performing work in a resident apartment that observes a mold condition shall create a parent mold work order either on the handheld device or submit a paper mold work order to the property management office.

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Maintenance & Skilled Trades

Employees must document the materials used in the Materials section of the mold-related child work order including, as applicable, the specific paint (mold resistant or standard) and sheetrock (mold resistant or standard).

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IWM App

- Designed by & for NYCHA Housing
- Mold inspection procedures
- Used to determine remediation work orders
- Integrated into Maximo to create child work orders
- Provides Quality Assurance & Reinspection procedures

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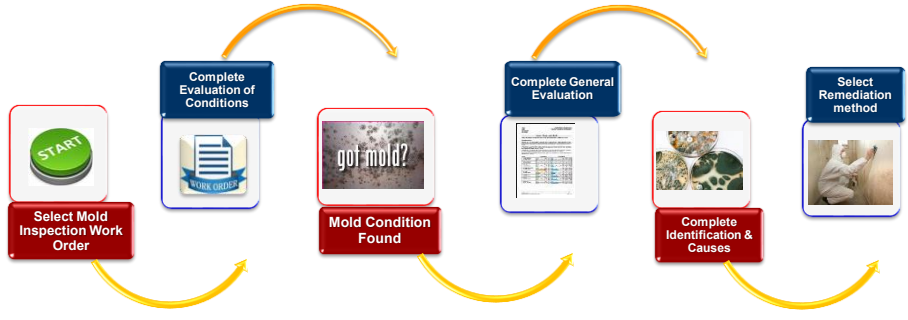
MOLD/MILDEW WO Workflow - (Continued)

Mold is Found …Doing the Work (Part 1)…



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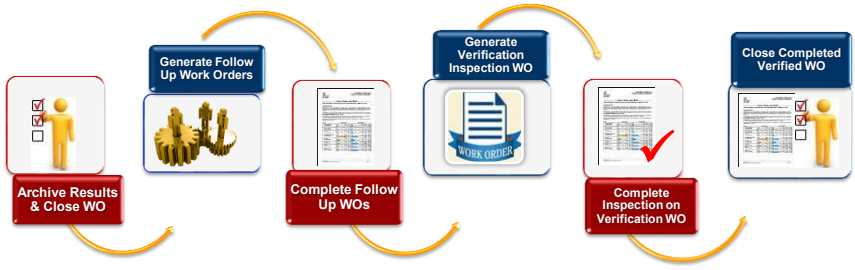
MOLD/MILDEW WO Workflow - (Continued)

Mold is Found …Doing the Work (Part 2)…

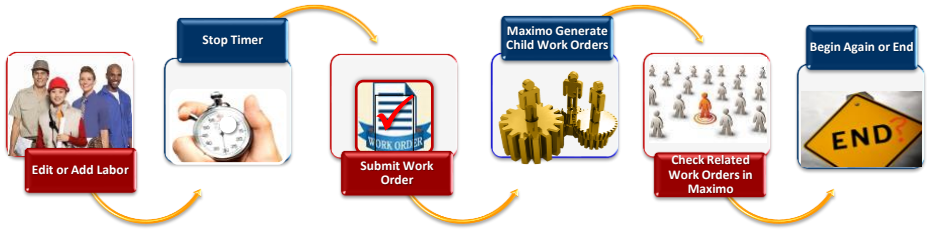


Work Order Workflow

Doing the work…

Work Order Workflow

Ending the work…



Inspection Procedures

On the scheduled date provided on the parent mold work order, the inspector visits the resident's apartment to:

- inspect the mold condition
- identify the probable root cause(s)
- determine appropriate next steps to remediate the mold, any related conditions, and correct the root cause(s).

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Conducting The Initial Inspection

The inspector conducts the initial inspection using the handheld device.

The inspector:

1. Visually inspects the room identified in the mold work order for mold growth and records the estimated square footage of mold on each wall (1-4), floor, ceiling, and any components.
2. Visually inspects the room for water damage and records the location of the water damage (e.g. the specific wall(s), floor, ceiling, or component).
3. Must use the moisture meter to measure the walls, floor, ceiling, and components in the room for subsurface moisture and records if a measurement is equal to or greater than 599 (i.e. a wet measurement).

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General Evaluation Of Room Conditions

If the room is a kitchen or bathroom:

Indicates if there is mechanical ventilation

- If there is mechanical ventilation:
  - The inspector checks the ventilation by using the anemometer to take an air flow measurement in cubic feet per minute (CFM) and records the result in the handheld device.
  - Maximo automatically generates child work orders:
    - To clean the horizontal vent ductwork.
    - To check the roof fan if the CFM is less than 25.

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Identifying The Probable Root Causes & Remediation Methods

The inspector determines the probable root cause(s) for any wall, floor, ceiling, or component identified in Section VIII.B.3.a above as having mold, water damage, or moisture (i.e. a wet measurement).

- The inspector selects on the handheld device a probable root cause from the following options: (see next slide)

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Mold Root Causes – Changes Overview

Twenty-nine (29) Root Causes are organized by five (5) general categories how the problem was caused.

I. Sealant Related Issues – Issues that can be resolved by removing and replacing old caulking.
Example: Caulking around a bathtub.

II. Leak Issues – Issues caused by a leak other than an sealant issue.
Example: Crack in exterior (façade) is causing a water enter the unit.

III. Resident-Caused – Issues that can be prevented due to adjustments to resident education and behavior.
Example: Resident is not opening a window after a shower.

IV. Ventilation – Issues that are a result of inoperable roof fans and/or lateral duct issues.
Example: A clog in the lateral duct is preventing air from flowing into the apartment.

V. Other – Issue(s) are being caused due to reasons outside of the four categories previously listed.
Example: Condensation (sweating on the pipes) due to the damaged or missing insulation.

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Identifying the Probable Root Causes & Remediation Methods

- Maximo automatically generates child work orders for the Failure Class/Problem Codes (except when the probable root cause is Resident – Cause) and the remediation methods selected.
- If there are any additional probable root causes, the inspector repeats the steps in Section VIII.B.3.c(1) above for each probable root cause.

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NYCHA MOLD TRAINING

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Standard Procedures - Remediation

All remediation & related maintenance work must conform to the protocols in the following documents:

- GM 040:14:1, Mold/Mildew Control in NYCHA Residential Buildings, including Appendix A – Remediation Methods
- SP 040:18:2 Revised, Maintenance Tasks – Dust Control and Clean Up in Apartments, which establishes Work Area Preparation/Performance Levels
- Interim Guidance on Wall Breaks
- Interim Guidance on Pipe Insulation

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Remediation Procedures – Note!

If cracked or crumbling tile is present, staff must:

- cover the exposed area of floor with plastic
- tape all edges securely with duct tape
- instruct the resident not to disturb the covered area
- contact the Technical Services Department's Asbestos Unit for further instructions.

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Remediation Procedures

2. All work must be documented with photographs, including at least one close-up photo of the condition(s) and at least one photo of the larger area.

- Employees must take and upload photos into Maximo using the handheld device of:
- The condition before work is performed.
- The condition after work is completed.
- Other photos as needed to demonstrate that work behind a surface was completed to standard, e.g. photos of insulated pipes, mold free areas.

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Remediation Procedures – Note!

Any work that would disturb more than 2 square feet per room in a unit which could contain lead-based paint must use lead-safe work practices and RRP certified workers.

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Personal Protective Equipment

Mold Remediation of Less than 100 Square Feet

Employees must wear the following:

- An N95 disposable respirator (i.e., a dust mask) in accordance with the OSHA respiratory protection standard (29 CFR 1910.134)
- Disposable protective clothing covering both head and shoes
- Gloves
- Eye protection

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SP 040:18:2 , RRP Dust Control – Site Prep

In **apartments**, discuss the following with the resident:

- Extent of containment needed
- How the containment area will be prepared
- Advise residents not to enter the containment area until after clean-up
- Direct residents not to allow children to enter any area in which plastic sheeting is being used or stored due to the risk of suffocation

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SP 040:18:2 , RRP Dust Control– Site Prep

- Secure the apartment and/or work area against unauthorized entry.
- Move all objects out of the room, if possible.

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Work Area Prep

- Pre-clean and install critical barriers
- Barriers are constructed to seal off all openings and penetrations to the work area
- Barriers to be constructed of 6 ml fire-retardant poly sealed with duct tape

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SP 040:18:2 , RRP Dust Control– Site Prep

- Close and cover all forced air systems (HVAC) in the work area with one layer of disposable polyethylene sheeting, including bathroom vents, common area vents, exhaust vents, and hall vents.
- All supply and air vents, doors, and pipe chases in the containment area must be sealed with polyethylene sheeting to minimize the spread of mold and mold spores to other areas of the building.

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SP 040:18:2 , RRP Dust Control – Site Prep

- Close windows, and where applicable, cover the windows with one layer of sheeting to prevent dust and debris from settling on windowsills.
- Close windows, and where applicable, cover the windows with one layer of sheeting to prevent dust and debris from settling on window sills.

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Non-Movable Items

- Items which can't be moved must be cleaned, covered and sealed with two layers of 6 ml poly to protect them from damage and contamination

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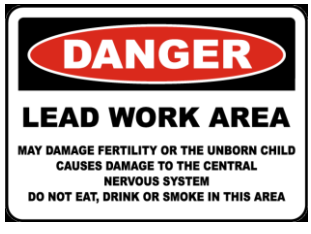
Warning Signs

- Shall be displayed at all accessible entrances and exits to remediation areas
- Should be in the language of the local population
- Should only be removed after final clean



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SP 040:18:2 , RRP Dust Control – Site Prep

- Cover the floor of the work area with one layer of six-mil disposable polyethylene sheeting, and tape the sheeting down to prevent movement.
- The floor sheeting must extend six (6) feet in all directions from the work area where practical, unless vertical containment is installed. Use two layers of sheeting to cover wall-to-wall carpeting, overlapping the seams by at least six (6) inches.

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SP 040:18:2 , RRP Dust Control– Site Prep

- If vertical containment is used, the floor covering may stop at the vertical barrier, if it is impermeable, extends from the floor to the ceiling, and is tightly sealed at all floors, ceiling, and walls.

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SP 040:18:2 , RRP Dust Control – Site Prep

- Cover the work area entrance or vertical containment doorway with one layer of sheeting.
- Tape the sheeting to the top of the door frame or vertical containment high point and weigh down the bottom to create a seal.
- Create a door flap on the sheeting that allows access into the work area.

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SP 040:18:2 , RRP Dust Control – Site Prep

- In kitchens and bathrooms, cover counter tops, cabinets, sink base cabinets, and all other horizontal surfaces with sheeting, to ensure that all doors and drawers are sealed.
- Cover the stove with sheeting and seal. Ensure that the stove is off and cool to the touch before covering.
- Cover and seal the refrigerator with sheeting. Prior to covering, cut slits in the sheeting to allow for ventilation.

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SP 040:18:2 , RRP Dust Control – Site Prep

Other items:

- Cover any items that cannot be relocated out of the work area.
- Tape the protective sheeting to the wall of the building or use a 2x4 wrapped in protective sheeting to hold the material next to the wall. Use heavy objects to weigh the other edges of the protective sheeting to the ground to secure.

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Work Area Prep Reminder!

- Work area must be cleaned (HEPA vac and/or wet methods)
  - –Methods that raise dust are prohibited
- Pre-cleaning intended for preparation work only!
  - –No disturbance of visible mold until containment is established

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Instructions for Specific Tasks – Pipe Insulation

When performing any wall break including instances where the probable root cause is the lack of pipe insulation in the wall, employees must install or replace pipe insulation in any area inside the wall cavity where the employee determines that the insulation is missing or defective.

The employee creating the wall break shall create an opening of sufficient size to allow visibility of all pipes within the wall cavity with assistance of the borescope.

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Instructions for Specific Tasks – Pipe Insulation

Lead-safe work practices and RRP certified workers must be used if (i) Maximo identifies that RRP work is required (the apartment is presumed or known to contain lead-based paint) and (ii) any work would disturb more than 2 square feet of a painted surface per room, or more than 10 percent of the total surface area on an interior or exterior type of component with a small surface area.

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Instructions for Specific Tasks – Pipe Insulation

If the current insulation in the wall cavity is a suspected asbestos-containing material, then no further work must be conducted, the hole must be sealed with either Masonite or 6 mm poly sheeting and duct tape, and a work order must be created for testing/abatement by the Technical Services Department's Asbestos Unit.

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Cleaning Horizontal Vent Ductwork

When cleaning horizontal vent ductwork from inside the apartment, employees:

- Remove the face of the grill to the vertical shaft and HEPA-vacuum the grill and the interior and exterior of the horizontal vent ductwork.
- *Use caution when cleaning the fire damper inside the ductwork*.

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SP 040:18:2 – Performing Work

- For painted surfaces, if a component is to be removed from an underlying surface, score the perimeter/edge of the component with a utility knife to minimize the quantity of painted surface that is impacted.
- Using the spray water bottle, spray the surfaces that will be disturbed to limit the creation and dispersal of dust. Periodically rewet the area while working
- If power tools are used that impact lead-based paint, only those equipped with a vacuum attachment connected to a HEPA vacuum are allowed to be used.

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SP 040:18:2 – Performing Work

Observe safety precautions in contained work areas:

- Do not eat or drink in the work area.
- Keep polyethylene sheeting away from open flames, e.g. stoves and blowtorches.
- Exercise caution when spraying in the vicinity of electrical outlets.
- Prevent children and pets from entering the work area.
- Immediately repair torn sheeting using duct tape for minor tears. Total sheet replacement may be necessary for major tears.

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SP 040:14:1 Mold/Mildew Control in NYCHA Buildings

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Ceiling: Painted Concrete (All Rooms)

A.HEPA-vacuum and clean with a detergent solution surfaces displaying water damage, mold growth, and/or that measure wet.

B. Wet-scrape or wire-brush any loose paint.

C. Repaint with mold resistant paint. In bathrooms & kitchens repaint with mod resistant paint

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Ceiling: Sheetrock with Steel Framing (Leak; all rooms)

A. Remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet. Continue removal to a point of at least 6 inches beyond any visible water damage or mold growth on the front or back sides of the sheetrock and/or areas that measure wet or to the next available framing member. **If mold growth is observed non the exposed adjacent wall, remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet.** In areas where significant water damage, mold growth, or moisture is present on sheetrock, use a HEPA-vacuum at the point of dust generation during the sheetrock removal work.

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B. Replace sheetrock. **In bathrooms & kitchens replace w mold resistant paint**

C. Repaint with standard paint. **In bathrooms & kitchens repaint with mold resistant paint.**

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Ceiling: Sheetrock with Wood Framing (Leak; All Rooms)

A. Remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet. Continue removal to a point of at least 6 inches beyond any visible water damage or mold growth on the front or back sides of the sheetrock and/or areas that measure wet or to the next available framing member. **If mold growth is observed non the exposed adjacent wall, remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet.** In areas where significant water damage, mold growth, or moisture is present on sheetrock, use a HEPA-vacuum at the point of dust generation during the sheetrock removal work.

B. HEPA-vacuum and clean with a soap or detergent solution any wood framing components displaying water damage and/or minor levels of mold growth.

C. Paint any wood framing components displaying water damage and/or minor levels of mold growth conditions with mold resistant paint.

D. Remove and replace wood framing displaying significant mold growth.

E. Replace sheetrock. **In bathrooms & kitchens repaint with mold resistant paint**.

F. Repaint with standard paint. **In bathrooms & kitchens repaint with mold resistant paint.**

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Ceiling: Sheetrock with Steel Framing (Condensation; Bathroom or Kitchen)

A. Remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet. Continue removal to a point of at least 6 inches beyond any visible water damage or mold growth on the front or back sides of the sheetrock and/or areas that measure wet or to the next available framing member. **If mold growth is observed non the exposed adjacent wall, remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet.** In areas where significant water damage, mold growth, or moisture is present on sheetrock, use a HEPA-vacuum at the point of dust generation during the sheetrock removal work.
B. Replace sheetrock.
C. Repaint with mold resistant paint.

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Ceiling: Sheetrock with Steel Framing (Condensation; Other Rooms)

A. Remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet. Continue removal to a point of at least 6 inches beyond any visible water damage or mold growth on the front or back sides of the sheetrock and/or areas that measure wet or to the next available framing member. **If mold growth is observed non the exposed adjacent wall, remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet.** In areas where significant water damage, mold growth, or moisture is present on sheetrock, use a HEPA-vacuum at the point of dust generation during the sheetrock removal work.
B. Replace sheetrock.
C. Repaint with standard paint.

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Ceiling: Sheetrock with Wood Framing (Condensation; Bathroom or Kitchen)

A. Remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet. Continue removal to a point of at least 6 inches beyond any visible water damage or mold growth on the front or back sides of the sheetrock and/or areas that measure wet or to the next available framing member. **If mold growth is observed non the exposed adjacent wall, remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet.** In areas where significant water damage, mold growth, or moisture is present on sheetrock, use a HEPA-vacuum at the point of dust generation during the sheetrock removal work.
B. HEPA-vacuum and clean with a soap or detergent solution any wood framing components displaying water damage and/or minor levels of mold growth.
C. Paint any wood framing components displaying water damage and/or minor levels of mold growth conditions with mold resistant paint.
D. Remove and replace wood framing displaying significant mold growth.
E. Replace sheetrock.
F. Repaint with mold resistant paint.

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Walls: Painted Plaster (Leak or Condensation; all rooms)

A. HEPA-vacuum and clean with a detergent solution surfaces displaying water damage, mold growth, and/or that measure wet.
B. Wet-scrape to remove the affected paint and top-coated plaster or skim-coating to which the paint is adhered. Continue wet-scraping to a point of at least 12 inches beyond any visible water damage, mold growth, and/or areas that measure wet.
C. Repaint with standard paint.

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Walls: Sheetrock with Steel Framing (Lead or Condensation; All Rooms)

A. Remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet. Continue removal to a point of at least 6 inches beyond any visible water damage or mold growth on the front or back sides of the sheetrock and/or areas that measure wet or to the next available framing member. **If mold growth is observed non the exposed adjacent wall, remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet.**
B. Replace sheetrock. **In bathrooms & kitchens repaint with mold resistant paint.**
C. Repaint with standard paint. **In bathrooms & kitchens repaint with mold resistant paint.**

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Walls: Sheetrock with Wood Framing (Leak or Condensation; all rooms)

A. Remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet. Continue removal to a point of at least 6 inches beyond any visible water damage or mold growth on the front or back sides of the sheetrock and/or areas that measure wet or to the next available framing member. **If mold growth is observed non the exposed adjacent wall, remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet.** In areas where significant water damage, mold growth, or moisture is present on sheetrock, use a HEPA-vacuum at the point of dust generation during the sheetrock removal work.
B. HEPA-vacuum and clean with a soap or detergent solution any wood framing components displaying water damage and/or minor levels of mold growth.
C. Paint any wood framing components displaying water damage and/or minor levels of mold growth conditions with mold resistant paint.
D. Remove and replace wood framing displaying significant mold growth.
E. Replace sheetrock. **In bathrooms & kitchens repaint with mold resistant paint.**
F. Repaint with standard paint. **In bathrooms & kitchens repaint with mold resistant paint**.

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Floors: Finished Wood Floors (Leak or Condensation; all rooms)

A. Remove and dispose of finished wood floorboards displaying significant water damage (buckling) and/or that measure wet. Continue removal to a point of at least 12 inches beyond any visible mold growth on the top and/or bottom sides of finished wood floorboards, plywood sub-flooring, and/or sleepers or to the perimeter of the room.
B. If wet, water-damage, and/or mold growth conditions reach the perimeter of a room, evaluate flooring in the adjacent room to determine if additional removal work is necessary.
C. Replace flooring.

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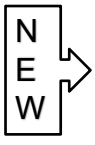
Floors: Ceramic Floors (Leak or Condensation: All Rooms)



A. Clean surfaces thoroughly using a low-toxicity household cleaner with slightly abrasive properties

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Floors: Vinyl Floor Tiles (Leak or Condensation; all rooms)

A. Remove and dispose of water-damaged vinyl floor tiles or tiles measuring wet.
B. HEPA-vacuum underlying concrete slab and clean using a detergent solution.
C. Replace floor tiles.

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Kitchen Cabinetry and Bathroom Vanities (Significant Mold)

A. Remove and dispose of cabinetry.
B. Replace cabinetry.

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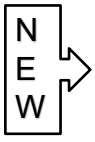
Bathtub & Shower Grout or Caulking



A. Where grout or caulking displays heavy and widespread levels of mols growth, dig out existing grout or caulking and replace with an approved mold resistant product.

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Minor Mold Growth (On Painted Surfaces, Shower Grout, Cabinets, etc)

A. Clean surfaces thoroughly using a low-toxicity household cleaner with slightly abrasive properties

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SP 040:18:2 – Dust Control RRP - Performing Work

The following work practices are prohibited:

- Open flame burning or torching of painted surfaces.
- Use of machines that remove paint or other surface coatings through high-speed operation, unless they have shrouds or containment systems and are equipped with a HEPA vacuum attachment.
- Operating a heat gun on painted surfaces above 1100 degrees Fahrenheit or charring the paint.
- Paint stripping using a volatile stripper in poorly ventilated space.
- Dry sanding or scraping, except within one (1) foot of electrical fixtures (e.g. switches, outlets, light fixtures, breaker boxes).

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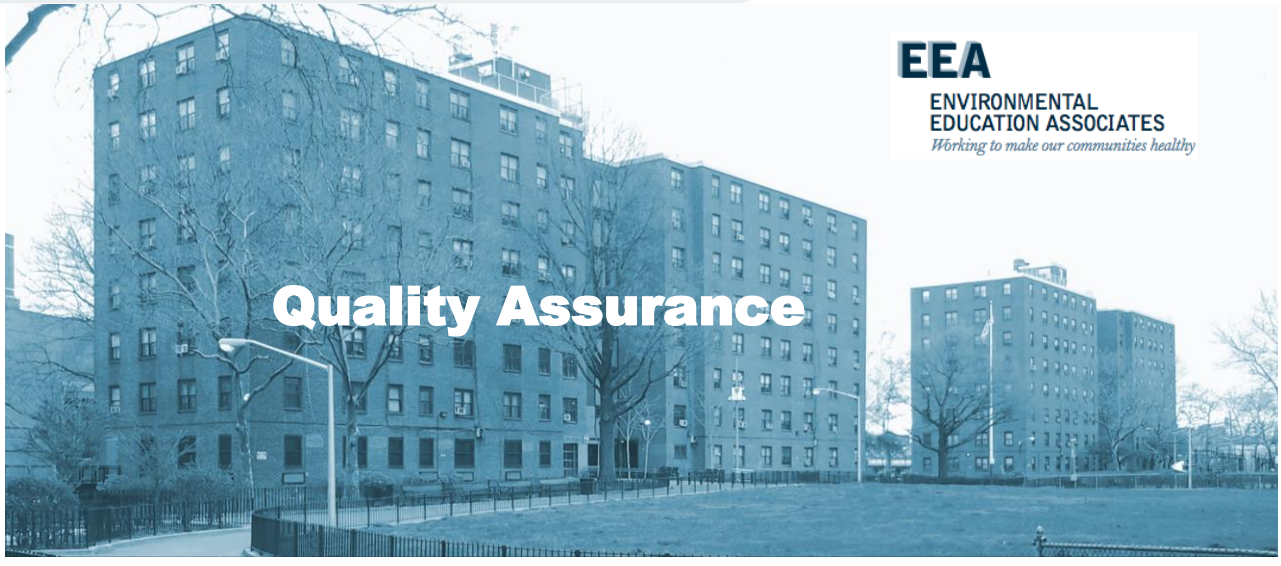
SP 040:14:1 Mold/Mildew Control in NYCHA Buildings



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Quality Assurance Inspections

- Maximo automatically generates a quality assurance inspection work order twenty-five (25) days after the last child work order is closed for all apartments where a mold, water damage, or moisture (i.e. a wet measurement) condition was identified during the inspection. The target start date is automatically populated as 30 days after the last child work order closed and the target end date is populated as 45 days after the last child work order closed.
- Once the quality assurance inspection work order is generated, property management staff contacts the resident and schedules the quality assurance inspection to take place between 30-45 days after the last child work order is closed. See Section VIII.A.3 for the process to schedule appointments.

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Quality Assurance Inspections

Inspecting for Mold, Water Damage, and Moisture

The Inspector:

- Visually inspects for mold any wall, floor, ceiling, or component identified in the initial inspection as having mold and records the results in the handheld device.
- Visually inspects for water damage any wall, floor, ceiling, or component identified in the initial inspection as having water damage and records the results in the handheld device.
- Uses the moisture meter to measure for subsurface moisture any, wall, floor, ceiling, or component that measured wet during the initial inspection and records the results in the handheld device.

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Quality Assurance Inspections

If all work was satisfactorily completed:

- The inspector completes the quality assurance inspection by taking photo(s) of the inspection area free of mold, water damage, and/or moisture and uploading the photo(s) into Maximo.

If any work was not satisfactorily completed:

The inspector:

- Immediately creates a child work order in Maximo.
- Takes and uploads a photograph of the unsatisfactory work into Maximo if the work is visible in the apartment.
- Closes the existing quality assurance inspection work order.
- Follows up with supervisor of the staff person(s) who performed the work to report the unsatisfactory work and ensure the work is completed.

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Quality Assurance Inspections

If any work was not satisfactorily completed:

The inspector:

- Immediately creates a child work order in Maximo.
- Takes and uploads a photograph of the unsatisfactory work into Maximo if the work is visible in the apartment.
- Closes the existing quality assurance inspection work order.
- Follows up with supervisor of the staff person(s) who performed the work to report the unsatisfactory work and ensure the work is completed.

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NYCHA MOLD TRAINING

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Outputs

- Mold in NYCHA apartments is remediated and the root causes are identified and corrected within the allowable timeframes.
- Mold recurrence is reduced

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Performance Reporting

OMAR shall centrally assign staff to review reports to identify developments with:

- High parent mold work order completion time frames.
- High rates of unfounded mold work orders.
- High reoccurrence rates for mold work orders.

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Performance Reporting

OMAR shall centrally assign staff to review reports to identify developments with:

- Visit developments and inspect randomly selected apartments with high rates of unfounded or reoccurring (as applicable) mold work orders.
- Report findings on the underlying issue, i.e. a building system and/or mold inspection and remediation process issue.
- Provide follow up recommendations to the Neighborhood Administrators.

  For building system issues, the supervisory staff may, for example, recommend additional repairs.

  For process issues, the Neighborhood Administrators follows up with the property manager and property maintenance supervisor to address the process issue which could include providing additional training, reviewing key accountabilities, or providing progressive discipline.

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Performance Reporting

OMAR shall centrally assign staff trained in scheduling mold work orders to:

- Provide follow up recommendations to the Property Management Department skilled trades deputy director or regional asset manager; or the director of MRST.
- For process issues, recommendations could include providing additional training, reviewing key accountabilities, and/or providing progressive discipline

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Reports

- Operations reports to be developed with the independent data analyst
- The IT Business Solutions Technology Department's Maximo Team retains electronically created and stored completed work orders for at least seven (7) years

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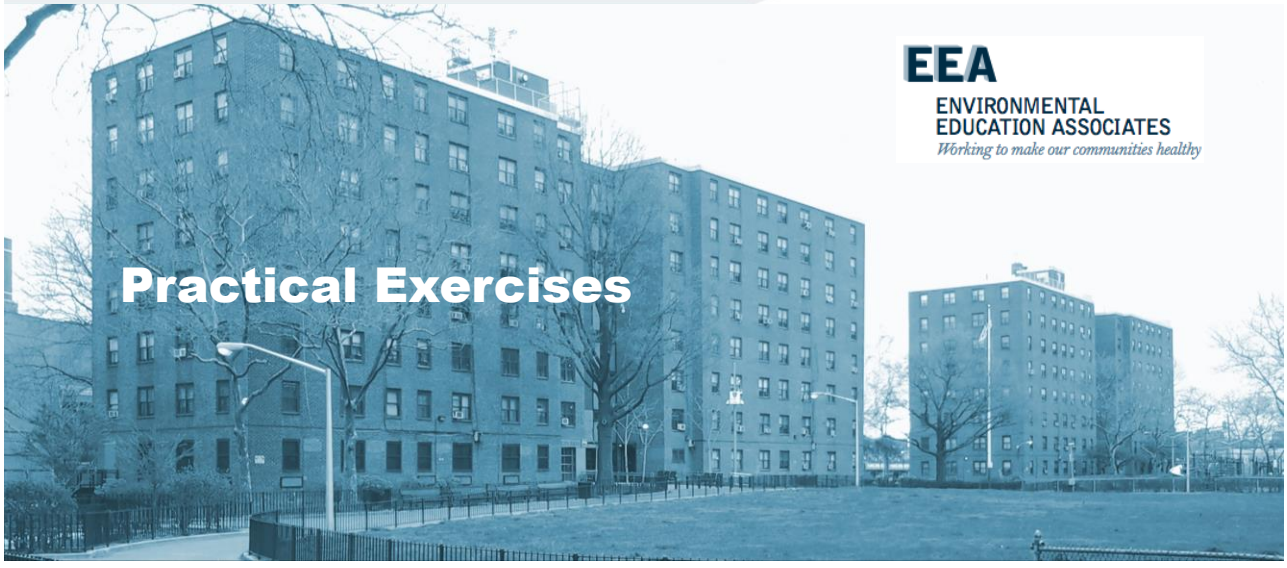
NYCHA MOLD TRAINING



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Instructor Demonstration

- Work practices, technologies & safety procedures related to mold remediation
  - Show and tell in hands-on space
- New procedures & practices

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Instructor Demonstration

- Case studies – mock scenarios based on attendees experiences
- Group discussion
  - What's working?
  - What needs improvement?
  - Other feedback

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Course Review

- Mold growth is always associated with **excessive moisture** problems.
- How do we identify excessive moisture and what are the **Root-Causes** of excessive moisture?
- How do we eliminate or reduce the **Root Causes**?
- How do we **remediate** mold contamination?

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