NYCHA MOLD TRAINING

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Welcome NYCHA Staff

- Registration and sign-in/out
- Training materials
- Training agenda
- Training goals
  - Understand importance of controlling mold and moisture
  - Be able to utilize mold inspection tools
  - Be familiar with the mold standard procedure

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Welcome 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.
- Leadership Intro

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Why Are We Here Today?

- Exposure to excessive moisture and mold is a well-documented asthma trigger, as recognized by the IOM (2004), WHO (2009), and NYC DOHMH (2008). Mold problems in NYCHA apartments continue to recur because:
  - Mold-prone surfaces are painted over providing a food source for mold.
  - Root causes of the underlying moisture conditions are not properly identified or addressed.

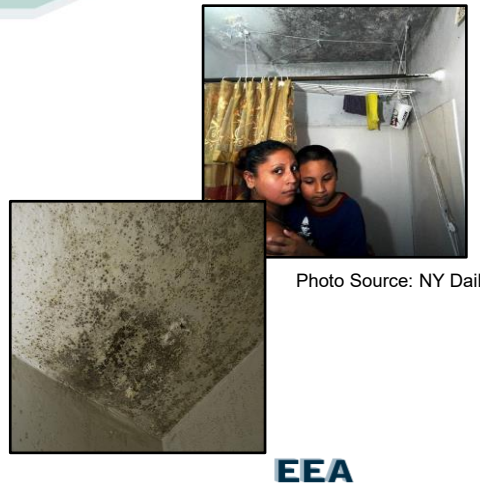

Photo Source: NY Daily News

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Public Housing Enemy 1

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Water Infiltration

- Major cause of mold growth.
- Present in approx. 75% of all properties.
- Moisture is the leading cause of building problems costing more than $9 billion dollars annually in the US.

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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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How Long Has Mold Been A Problem?

From Leviticus Chapter 14, verses 33-57

On the seventh day the priest shall return to inspect the house. If the mold has spread on the walls. He is to order that the contaminated stones be torn out and thrown into an unclean place outside the town. He must have all the inside walls of the house scraped and the material that is scrapped off dumped into an unclean place outside the town. Then they are to take other stones to replace these and take new clay and plaster the house.

If the mold reappears in the house after the stones have been torn out and the house scrapped and plastered the priest is to go and examine it and if the mold has spread in the house, it is a destructive mold: the house is unclean. It must be torn down - its stones, timbers and all the plaster - and taken out of the town to an unclean place.

Anyone who goes into the house while it is closed up will be unclean till evening.

Anyone who sleeps or eats in the house must wash his clothes...

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NYCHA Facilities

- 1,882 residential buildings in 243 developments over 5 boroughs
- 152,926 apartments
- 298,206 residents
- 77% (based on all 243 developments) of buildings built before 1969.
- Building materials that can be affected by mold and moisture include:
  - Plaster
  - Sheetrock
  - Wood studs/framing
  - Cabinets
  - Caulk and grout

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Where Does Mold Grow?

- 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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Preventing Mold

- Mold growth is always associated with excessive moisture.
- How do we prevent or control excessive moisture and what are the root causes of excessive moisture?

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Mold Root Causes

- The fundamental reasons for the occurrence of mold, water damage or moisture.
- Root causes might often be not visible at first and require a comprehensive investigation to identify.
- Excessive moisture can be coming from multiple root causes.

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Mold Root Causes

NYCHA identified 29 root causes that are organized in 5 categories:

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

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

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.

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.

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

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Preventing Mold Growth

- Control moisture from internal sources.
- Keep exterior moisture out of the building.

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Preventing Mold Growth

- Establish a cooperative partnership between NYCHA staff and residents so that conditions are identified and dealt with promptly.
- 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.
- It's important for NYCHA staff and residents to team up and tackle mold issues as soon as they appear. Whether it's a leak, condensation, or a flood, catching it early makes a difference.

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NYCHA Sustainability Agenda

- NYCHA is committing to systemically eliminating the root causes of mold by fixing leaks in roofs, facades, pipes and modernizing ventilation systems Roof Fan Repair & Replacement Project 2021.
- Leak and Moisture Control Standard Procedure and Training (2025 roll-out).

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Top 10 Things You Should Know About Mold and Moisture

1. Exposures to mold and excessive moisture may cause allergic reactions, asthma, and other respiratory complaints.
2. Mold can grow on almost any substance if moisture is present. Mold can grow on sheetrock, painted plaster, concrete, wood, paper, carpet, foods, and 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.

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Top 10 Things You Should Know About Mold and 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.
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.

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Top 10 Things You Should Know About Mold and Moisture

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 hard surfaces with water and detergent, and dry completely. Absorbent materials, such as sheetrock, that are moldy will need to be replaced.
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 asthmatic, individuals with mold and/or excessive moisture in their apartments are entitled to reasonable accommodations from NYCHA.

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Indoor Air Quality

- Air pollution can enter lungs and cause inflammation. This in turn can cause respiratory disease and symptoms such as chest pain and coughing, even among healthy individuals.
- Air pollution can impact the cardiovascular system, increasing risk of heart attacks or blood clots.

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Temperature & Humidity

- High temperatures promote mold growth.
- Mold spores, dust mites and other allergens survive best in high **humidity** environments.

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Air Movement

- Too little air flow causes stuffy and uncomfortable environments.
- Poor air flow may result from residents' efforts to control pests and odors.
- Adequate ventilation is critical for drying moisture.

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Airborne Contaminants

- Bioaerosols, such as mold spores, are airborne particles that are either living or originate from living organisms. They include microorganisms, fragments, toxins, and particulate waste products.
- Bioaerosols are transported by wind, ventilation, and hosts. They settle on host surfaces and reproduce.
- Exposure occurs through inhalation and ingestion.

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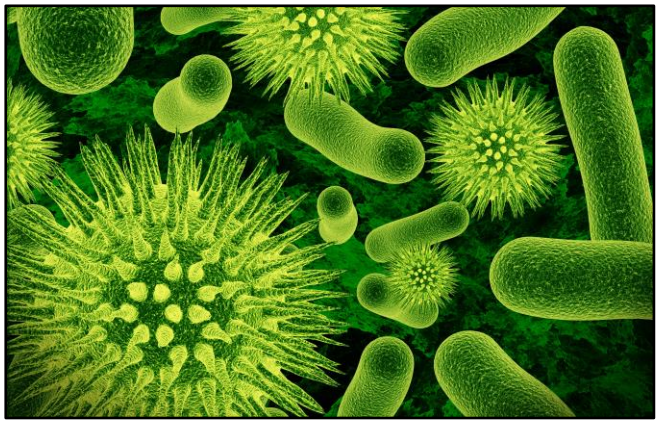
Microbes



A group of extremely small life forms that are usually visible only with the aid of a microscope.

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Unit of Measure

Micron:

- A micron is a measurement equal to one millionth of a meter or 0.00003937
- Human Hair = 75u
- Human eye sees 50u

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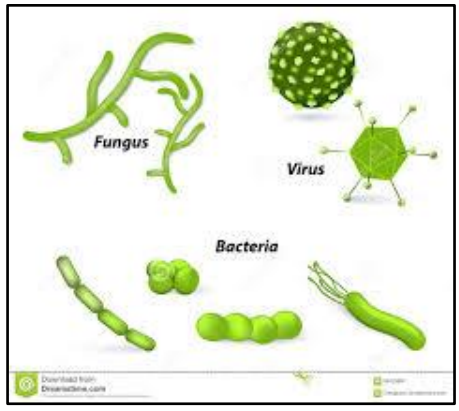
Microbial Organisms

- Viruses
- Bacteria
- Fungi



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Viruses

Viruses are ultra small microbes (.03 to .25 microns).

- A unique characteristic of a virus is that it can only reproduce in a host organism.
- They can remain dormant, or they can invade a cell, using it to reproduce additional viruses.
- They can be extremely durable.

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Bacteria

Extremely small microbes (.4 to 10 microns).

- Bacteria are everywhere and are necessary to life.
- Some bacteria are saprophytic (feeding on non-living organisms) and others are parasitic (feeding on living organisms).
- In addition, they can be aerobic or anaerobic (needing or not needing oxygen to survive).
- Many bacteria found in sewage can grow in low oxygen environments.

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Fungi

- Fungi are a kingdom of usually multicellular organisms that have important roles in nutrient cycling in an ecosystem.
- Unlike plants, fungi do not have roots or leaves, do not contain chlorophyll, and do not produce their own food; instead, they obtain nourishment from dead organic matter.
- Fungi include molds, mildew, mushroom & yeasts.
- All mold is fungi, but not all fungi is mold.

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Fungi

Most molds consist of cells that are filamentous (thread-like).

- These cells, called hyphae, collectively form mycelium. Well established growth is referred to as colonization.
- Molds generally reproduce by means of spores, but not all spores are viable.
- Spores are typically transported thru the air and land of surfaces.

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Stachybotrys chartarum

http://www.doctorfungus.org

- **Genus/Species:** *Stachybotrys chartarum*
- **Image Type:** Micro Lab
- **Legend:** Conidia of Stachybotrys chartarum, 1000x
- **Title:**
- **Disease(s):** Environmental infestation

NYCHA Mold Inspector

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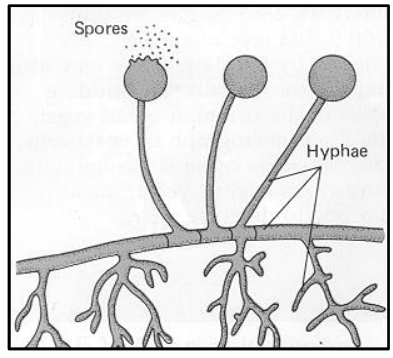
Fungus Body Composition

- Hyphae – body filament
- Mycelium – mass of visual hyphae
- Spores – reproductive structures



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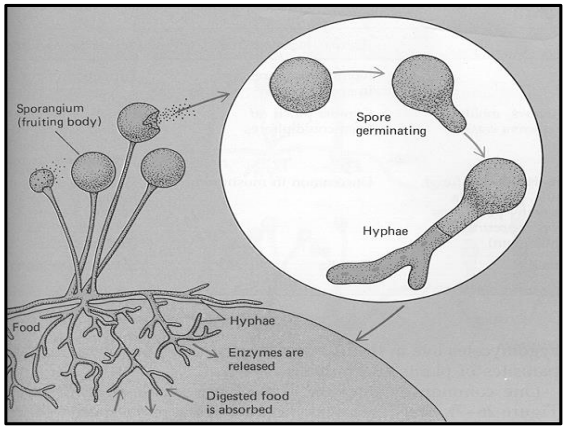
Fungus Body Composition



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Microscopic View of Mold Body

Types of Mold

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Penicillium marneffei

http://www.doctorfungus.org

• Genus/Species:	*Penicillium marneffei*	• Title:	Penicillus of Penicillium marneffei
•Image Type:	MicroLaboratory	• Disease(s):	Penicilliosis marneffei

• Legend: Non branching chains of one-celled conidia arising from phialides. Phase contrast microscopy, 400X.

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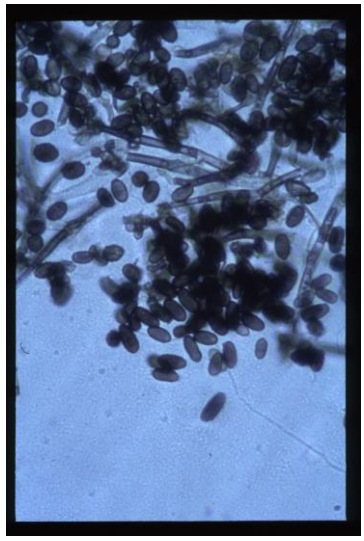
Stachybotrys chartarum

http://www.doctorfungus.org



- **Genus/Species:** *Stachybotrys chartarum*
- **Image Type:** Micro Lab
- **Title:**
- **Disease(s):** Environmental infestation
- **Legend:** Conidia of Stachybotrys chartarum on a ceiling tile.

NYCHA Mold Inspector

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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.
- It won't grow or spread and isn't a fungus.

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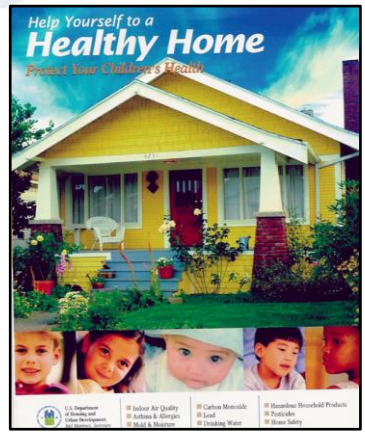
Why Is Mold A Problem Today?

Recent discoveries link mold with health problems.



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Potential Health Effects

- Allergic reactions/disease
- Irritant effects
- Infections
- Toxic effects

"Breathing Mold Can Cause Health Issues" – IAQ TV

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Exposures To Residential Dampness And Mold

Associated with increased risk of:

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

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Mold Exposure Symptoms

- Sneezing
- Runny nose
- Coughing
- Wheezing
- Watery eyes
- Red eyes
- Itchy eyes
- Skin irritation, or rash

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Allergic Responses

- Reactions can be immediate or delayed.
- Reactions can result from inhaling or touching mold or mold spores.
- Mold spores and fragments, whether dead or alive, can produce an allergic reaction in sensitive individuals.
- Repeated or single exposure may cause previously non-sensitive individuals to become sensitive.
- Repeated exposure has the potential to increase sensitivity.

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Allergic Responses

- Mold can trigger asthma attacks in persons allergic to mold.
- Asthma is a major problem in New York City. In some low-income parts of New York City, as many as 1 in 4 children have asthma.
- What is Asthma? - Khan Institute

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Asthma Prevalence Data

- United States: 20 million - 1 in 15 or 6.7% [1]
- New York City: 813,000 - 1 in 7.5 or 13.5% [2]
- East Harlem: 20,000 - 1 in 5 or 19.6% [2]

1. Asthma and Allergy Foundation of America
2. NYC DOHMH Community Health Survey

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Allergic Responses

Hypersensitivity pneumonitis (HP)

- Rare but serious, immune-related condition resembling bacterial pneumonia.
- May develop after either acute or chronic exposure (via inhalation) to mold.
- Usually related to occupational exposure.
- Can also be caused by bacteria.

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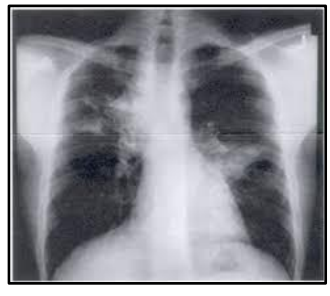
Uncommon Allergic Syndromes

- Allergic bronchopulmonary aspergillosis
- Allergic fungal sinusitis



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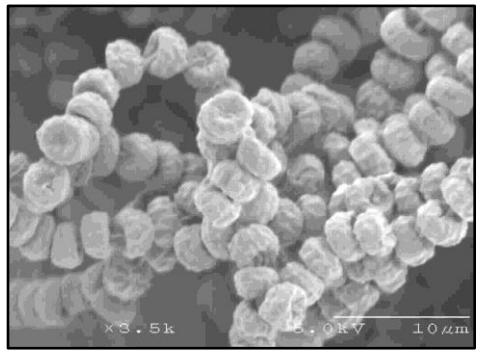
Irritant Effects

Irritation of:

- Eyes
- Skin
- Nose
- Throat
- Lungs



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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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Toxic Reactions

- Some molds can produce toxic substances called mycotoxins.
- Some mycotoxins are on the surface of mold spores others are within the spore.
- Over 200 mycotoxins have been identified from common molds.

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Microbial Volatile Organic Compounds (MVOCs)

- The musty, moldy odors in water-damaged indoor environments are compounds produced by metabolically active bacteria and fungi.
- While health effects have not been attributed to MVOC exposure, their presence is an indicator of microbial contamination, the need for proper remediation practices, and the use of appropriate personal protective equipment.

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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 most 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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Other Environmental Health Issues

During mold remediation projects, workers could be exposed to other substances or hazardous materials that could cause adverse health effects:

- Asbestos
- Lead-based paint
- High levels of particulates
- Bacteria (associated with water-damaged materials, floods, sewage backups)
- Cleaning products/biocides used as part of the projects

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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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Public Awareness

DAILY NEWS

NYC Housing Authority to come under judicial oversight over mold in apartments

A child in a NYCHA apartment with mold on the wall. The New York City Housing Authority will come under federal judicial oversight over mold in apartments, enabling residents to go directly to a federal judge if the agency does not resolve the problem. (Richard Harbus for New York Daily News)

- Receiving Attention
  - Media
  - Medical
  - Legal
- Baez Lawsuit
- HUD Agreement

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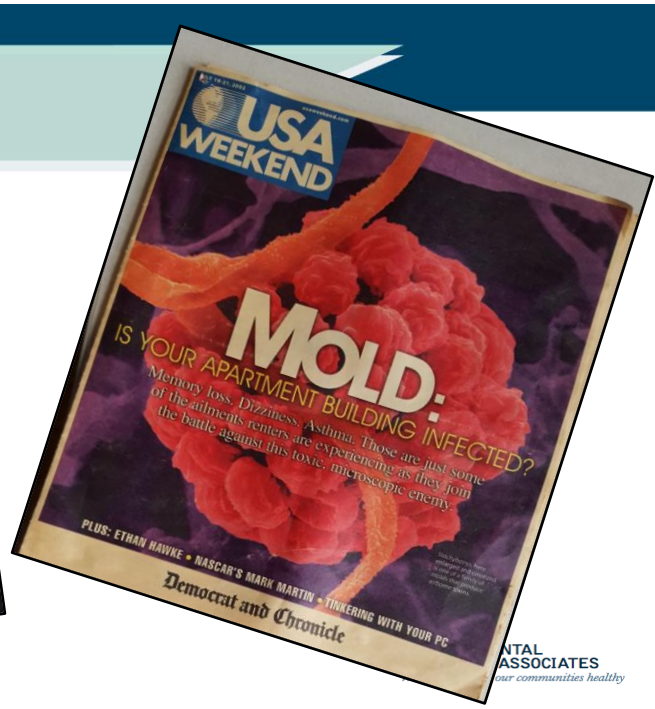

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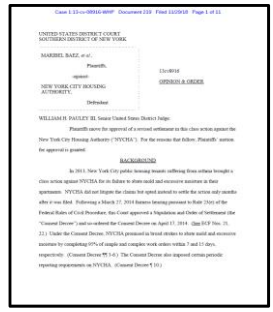
Baez Lawsuit

Maribel Baez vs. NYCHA ("*Baez*") is a class action lawsuit filed in December 2013, alleging a violation of the Americans with Disabilities Act for the conditions of mold and excessive moisture for residents suffering from asthma. The case never went to trial – it was filed with a settlement agreement (a Consent Decree). In July 2018, the parties filed a Revised Consent Decree.



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

The Court appointed a Special Master and independent experts including:

- The Ombudsperson
- The Independent Data Analyst (IDA)
- The Independent Mold Analyst (IMA)

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Baez Lawsuit - Ombudsperson

Ombudsperson

NYCHA is under a court order to effectively remediate mold and excessive moisture in a timely fashion. The Court has appointed **César de Castro** as the Ombudsperson to consider complaints from Residents if NYCHA fails to comply with that order. Mr. de Castro will address NYCHA residents' complaints about leak, mold and excess moisture repair orders. Mr. de Castro and the OCC, which works under Mr. de Castro's direction, are completely independent of NYCHA.

Mr. de Castro is an experienced litigator whose practice focuses on criminal defense, corporate investigations, commercial litigation, and appellate litigation. Mr. de Castro is a former judicial law clerk and prosecutor who has been practicing law for nearly twenty years. He has also served as an adjunct law professor of legal writing and is currently an adjunct professor of criminal law.

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HUD Agreement

In January 2019, the U.S. Department of Housing and Urban Development, NYCHA, and the City of New York, entered the Agreement which established the role of HUD Monitor and outlined the following requirements for NYCHA:

Within 2 years:

- For 95% of verified mold complaints, clean visible mold and provide a written plan to address root causes within 5 days of notification and remediate root causes within 7 days for simple repairs, and within 15 days for complex repairs.
- For leaks from above or floods, abate the condition within 24 hours and remove any standing water within 48 hours.

Within 5 years:

- For 85% of verified mold complaints, no second complaint in the same unit/common area within 12 months.

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NYCHA Mold Busters

- **Better Tools:** Staff use new tools to find and fix the source of the problem, including moisture meters and mold-resistant paint.
- **Enhanced Training:** Staff receive additional hands-on training to become successful Mold Busters.
- **More Accountability:** The mold inspection process requires photos of the affected areas and guides staff through the process of finding the cause of the mold or moisture problem. NYCHA also inspects apartments after all work is done to ensure there is no mold present and that repairs were performed correctly.

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Standard Procedures

Establishes an agency-wide response to mold and its root causes across 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

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

- SP 040:14:1 *Mold/Mildew Control in NYCHA Residential Buildings*.
- NYCHA Informer Work Management (iWM) handheld application.

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Initial Training Requirements

- Inspector (32 hrs.) -Training on inspection tools and methods as well as conducting and documenting mold inspections.
- 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.
- Staff are not permitted to do mold inspections and document work in iWM and Maximo before completing training.

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Refresher Training Requirements

- Inspector (4 hrs.) - Updates on best practices, inspection techniques and instruments – *attended by previously certified inspectors only.*
- Required once every 2 years.

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Performance Metrics

- Average number of calendar days to complete simple and complex repairs and close mold work orders.
- Average number of calendar days to complete initial inspections.
- % of mold work orders for reoccurring mold.
- % of failed quality assurance mold inspections.

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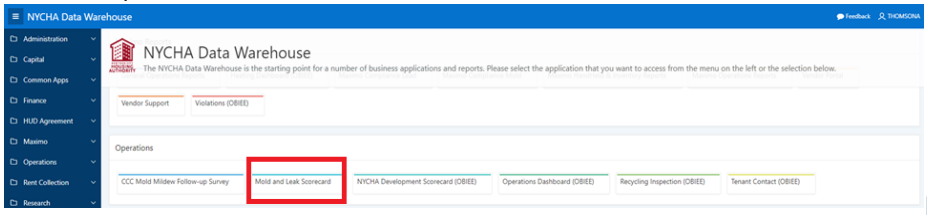
Mold and Leaks Scorecard

- A ranking tool that evaluates NYCHA's performance on key metrics at the consolidation, neighborhood, borough, and NYCHA-wide level.
- The scorecard updates twice a week on Mondays and Wednesdays. It is required that vice presidents, operations administrators, skilled trades deputy directors, skilled trades administrators, borough planners, neighborhood administrators, neighborhood planners, property managers, property maintenance supervisors, and assistant property maintenance supervisors review the Scorecard at least once per week.



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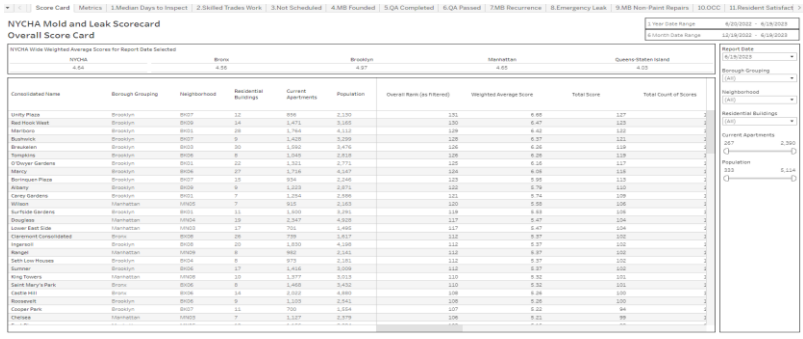
Mold and Leak Scorecard Views

This view allows PMs and supers to monitor consolidation rankings on the Mold and Leak Scorecard and compare against other consolidations in their neighborhood or across NYCHA.



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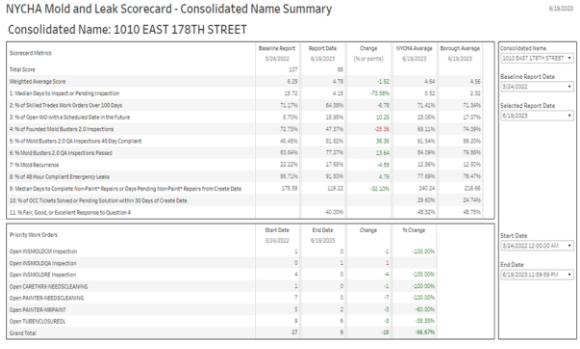
Mold and Leak Scorecard Uses

- Monitoring the number of open mold inspections per consolidation.
- Ensuring that initial mold inspection work orders are addressed in a timely manner.
- Ensuring that mold QA inspections are addressed in a timely manner.
- Monitoring quality of the work by:
  - Flagging high unfounded rates
  - Flagging high recurrence rates
  - Flagging high percent of failing mold QAs
- Ensuring that emergency leaks are promptly addressed.



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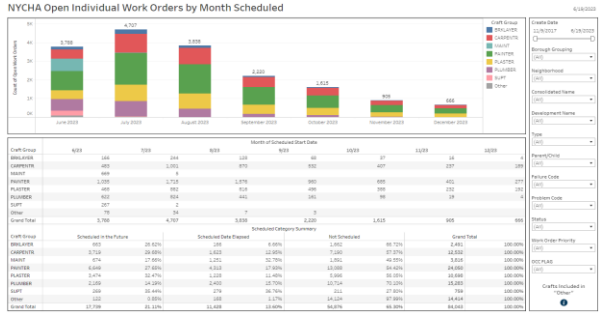
Mold and Leak Scorecard Uses

Some NYCHA Mold and Leak Scorecard Views can assist with performance management.

This view allows PMs and supers to monitor craft scheduling and to take proactive action to escalate repair needs



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Performance management: EOP Program

In June 2022, OMAR launched EOP to turn around struggling consolidations by:

- Improving mold inspection timelines and quality of inspections.
- Addressing priority mold and leak work orders (inspections, mold cleaning, mold-resistant paint).
- Providing field training, when needed.
- Focusing on work order verification and addressing aging backlogs.
- Identifying scheduling gaps and assisting with expediting repairs requiring immediate attention.
- Flagging high-priority OCC cases.
- Assisting with overcoming procurement roadblocks.

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Other Agency Guidelines

The New York City Department of Health and Mental Hygiene's *Guidelines on Assessment and Remediation of Fungi in Indoor Environments – 2008*

- Environmental assessment
  - Visual inspection
  - Environmental sampling
- Communication with building occupants

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Other Agency Guidelines

The New York City Department of Health and Mental Hygiene's *Guidelines on Assessment and Remediation of Fungi in Indoor Environments – 2008*

- Remediation
- Moisture control and building repair
- Worker training
- Cleaning methods
- Quality assurance indicators
- Restoring treated spaces

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Other Agency Guidelines

EPA's *Mold Remediation in Schools and Commercial Buildings – 2008*

- Key steps of mold remediation
- Plan remediation before starting work
- Remediation planning
- HVAC system

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NYS Article 32

- Signed by Governor in January 2015.
- Establishes certification and licensing program with fees.
- Provides accreditation of training providers.
- Establishes standards for assessment and remediation.
- Defines best practices and procedures.
- Serves as the basis for this training.

NEW YORK STATE Department of Health

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NYS Article 32

Exemptions:

- A residential property owner who performs mold inspection, assessment, remediation, or abatement on his or her own property.
- A non-residential property owner, or the employee of such owner, who performs mold assessment, remediation, or abatement on an apartment building owned by that person where the property has four or less dwelling units.
- An owner or a managing agent or a full-time employee of an owner or managing agent who performs mold assessment, remediation, or abatement on commercial property or a residential apartment building of more than four dwelling units owned by the owner.
- This exemption will not apply if the managing agent or employee engages in the business of performing mold assessment, remediation, or abatement for the public; and
- **A federal, state or local governmental unit or public authority and employees thereof that perform mold assessment, remediation, or abatement on any property owned, managed or remediated by such governmental unit or authority.**

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NYCHA MOLD TRAINING

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Office of Mold Assessment and Remediation (OMAR)

- Tracks and reports NYCHA's obligations under the *Baez Consent Decree* and related supplemental agreements, and deliverables based on the settlement agreement between NYCHA, HUD, the U.S. Attorney's Office for the Southern District of New York, and New York City entered into on January 31, 2019.
- Serves as NYCHA's liaison to the Special Master, Baez Consent Decree plaintiffs, and court-appointed entities.
- Administers the Mold and Leak Performance Scorecard, including providing access, training, and oversight.

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Ombudsperson Call Center

- Is an independent third-party office for NYCHA residents to raise concerns regarding mold, leaks, and moisture conditions.
- Holds NYCHA accountable for completing necessary mold and leak-related repairs in a timely manner.
- Refers cases to the Office of Mold Assessment and Remediation, the Compliance Department, and the IMA to ensure that the root causes of mold and leaks are identified and remediated.

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OMAR Response Unit

The Mold Response Unit collaborates with the Ombudsperson Call Center by monitoring and case-managing complaints. The Mold Response Unit:

- Tracks complaints from residents until resolution and confirmation of resident satisfaction.
- Hosts check-ins with residents to inform them about the repair processes.
- Bridges the gap in communication to ensure that repairs are completed as scheduled.
- Informs residents about mold prevention through campaigns and targeted outreach.
- Ensures the proper work orders are created and sequenced.
- Escalates severe conditions for prioritization of scheduling or relocation.
- Ensures root causes are identified and remediated.

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Vice Presidents For Property Mgmt. and Operations Administrators

- Monitor key borough, neighborhood, and consolidation-level data for mold and leaks through the Scorecard, including but not limited to:
  - Response rates to reported mold conditions (for example: median dates to inspect for reported mold conditions, percentage of Quality Assurance inspections completed within 45 calendar days).
  - Simple and complex repair completion timeframes.
  - Mold recurrence rates.
  - Percentage of mold work orders closed as unfounded.

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Skilled Trades Deputy Directors

- Monitor skilled trades administrators, borough planners, and their respective employees to ensure timely and protocol-compliant response to mold remediation work orders.
- Recommend repair approaches as needed.
- Coordinate with administrators and supervisors to ensure staff attend scheduled appointments and follow established procedures.
- Check material availability weekly and follow up as needed.
- Monitor skilled trades work order trends via the Scorecard across all areas.

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Skilled Trades Borough Planners

- Schedule initial mold inspections.
- Schedule skilled trades staff to ensure that complex repairs performed by glaziers, roofers, or reserve teams that do not require capital improvements are completed no later than 15 calendar days after a leak or excessive moisture condition is detected or reported to NYCHA.
- Schedule newly created glaziers and roofers mold work orders.

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Neighborhood Administrators

- Monitor property management operations and hold neighborhood planners, property managers, and property maintenance supervisors, accountable for responding to mold work orders.
- Monitor the Scorecard for performance of the neighborhood and consolidations and set plans to address performance issues of the neighborhood and/or consolidations.
- Set priorities and plans for addressing mold work orders on the neighborhood level.
- Monitor the Scorecard for performance of the neighborhood and consolidations once per week.
- Ensure vendor skilled trade work orders are closed.

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Neighborhood Planners

- Schedule neighborhood-level skilled trades work orders after a mold condition is detected to ensure that complex repairs performed within 15 calendar days
- Monitor the Scorecard and set plans to address performance issues of the neighborhood and/or consolidations once per week.
- Schedule backlog mold work orders and/or reschedule appointments when needed.
- Coordinate with the borough planner the scheduling of borough-level skilled trades.
- Send out the next day's schedule for all skilled trades staff to each property management supervisor by close of business.
- Review the development work order list to identify what materials for mold work orders are needed.
- Ensure that materials are in stock before scheduling mold work
- Escalate any mold issues to the neighborhood administrator when needed.

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Property Manager

- Monitor key development-level mold indicators in Maximo, including but not limited to, scheduled appointments, parent and child mold work order completion timeframes, mold recurrence rates, and unfounded inspection rates.
- Ensure that the work orders for simple repairs are scheduled and completed within seven calendar days.
- Monitor completion of complex repairs and follow up with the skilled trades administrator if work is not completed within 15 calendar days.
- Ensure that quality assurance mold inspections are scheduled and completed between 30-45 calendar days after the last child work order is closed.
- Perform mold inspections when the property maintenance supervisor, assistant property maintenance supervisor, or maintenance workers certified in mold inspections are not available.
- Monitor the Scorecard for performance of the consolidation once per week.

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Property Maintenance, Supervisors, and Asst Supers

- Attend scheduled mold appointments, performing initial inspections, quality assurance checks, and re-inspections with the required tools and contact residents using IWM app.
- Ensure the timely rescheduling of all mold work orders including initial mold inspections, quality assurance mold inspections, and mold re-inspections.
- Schedule child work orders for simple repairs and ensure completion within seven days.
- Monitor scheduling and completion of complex repairs, closely communicate with neighborhood planners and borough planners regarding scheduling and prioritizing work orders, and follow up with the skilled trades administrator if work is not completed within 15 calendar days.

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Property Maintenance, Supervisors, and Asst Supers

- Make best efforts to assign a different employee to perform the remediation and/or quality assurance mold inspection than the one who performed the initial mold inspection.
- Work closely with supervisors of Caretaker Xs to ensure that staff is assigned to visit apartments for mold cleaning (less than or equal to 20 square feet of mold in units that are not presumed positive for lead with lead-based paint).
- Ensure that quality assurance mold inspections are scheduled and completed between 30-45 calendar days after the last child work order is closed.
- Monitor the Scorecard for performance of the consolidation.

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Maintenance Workers

- Visit apartments for all mold work appointments as scheduled for both repair and mold inspection work orders.
- Record resident outreach attempts in the iWM app.

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Skilled Trades Supervisors

- Oversee the daily work activities of all skilled trades staff to ensure that repairs are completed in required timeframes and following protocols established for identifying and correcting root causes.
- Ensure staff are equipped with all necessary personal protective equipment (PPE) and adequate safety measures are followed.
- Inspect work in progress and completed work to ensure best practices are followed.
- Notify the property maintenance supervisor when the work is completed and/or if additional skilled trades staff is required.
- Perform regular inventory of in-stock materials and prepare order request for property managers.

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Lead Hazard Control Dept

- The supervisor of the Abatement and Clearance Unit:
  - Oversees staff who perform large mold remediation jobs (100 sq. feet and larger).
  - Coordinates scheduling work with the Technical Resources Environmental Field Operations Unit based on a daily Maximo report which displays all mold work orders under the lead abatement worker (LAW) craft.
- Abatement and Clearance Unit staff report apartments with popcorn ceilings that require asbestos testing to the Healthy Homes Department before mold remediation can begin.

NOTE: After abatement work is complete, property management staff are responsible for coordinating and scheduling remaining repairs.

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Compliance Department

- Ensures that all NYCHA employees comply with laws and regulations and that NYCHA is ethical in fulfilling its mission to provide safe, affordable housing to its residents.
- Determines trends, performs data analyses, and ensures response actions are completed in accordance with the Mold Standard Procedure.
- Analyzes and investigates potential deviations from the Mold Standard Procedure.
- Performs analyses and assessments on mold and leak complaints submitted by internal and external stakeholders through the department's Complaint Forum on the NYCHA website.
- Refers cases to the Environmental Health and Safety Department, the Customer Operations Department, Ombudsperson Call Center, and Quality Assurance Department.

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Environmental Health and Safety Department

- Performs oversight inspections of mold work orders at NYCHA-owned and operated properties.
- Responds to and investigates resident and employee complaints received through NYCHA's complaint forum regarding hazards that pose a threat to their health and safety including mold and other indoor air quality issues.
- Issues corrective actions to NYCHA departments to address deficiencies identified during investigations and oversight. Corrective actions may include relocation of tenants or employees until hazards are abated.
- Administers NYCHA's Respiratory Protection Program in accordance with NYCHA Standard Procedure 001:17:2, *NYCHA Respiratory Protection Safety Program*.
- Oversees NYCHA's Hazard Communication Program including maintenance of the Safety Data Sheet database and initial safety trainings and refreshers to ensure NYCHA's compliance.

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Vendors

- NYCHA employees cannot assign a vendor mold remediation work order more than 10 sq. ft. without first confirming that the vendor **and** vendor staff are certified and/or licensed to perform the required work, as required by NYS DOL Article 32 guidelines for the *Licensing of Mold Inspection, Assessment and Remediation Specialists and Minimum Work Standards.*
  - Each vendor performing repairs linked to mold more than 10 sq. ft. must hold a NY State Mold Remediator Company License.
  - Each vendor performing repairs linked to mold more than 10 sq. ft. must hold a valid NY State Mold Abatement Worker License.

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Property Managers, Supervisors, and Assistant Supervisors

- Confirm that the vendor staff performing work have the appropriate certification(s) and/or license(s) before assigning work orders.
- Confirm that the vendor's employees have a physical or electronic copy of their valid certification with them. **If the vendor's employees cannot produce a copy of the certification, they cannot perform work.**
- Save copies of vendor and staff mold remediation licenses in the appropriate contract file for documentation purposes.
- Ensure all vendor work is completed according to the scope of work.

NOTE: Some work orders require firms and workers to have Renovation, Repair, and Paint (RRP) certifications. For example, if there is a mold remediation ticket that is in an apartment that requires RRP, the firms and workers must have both certifications/licenses. For more information, see NYCHA Standard Procedure 050:20:1, *Lead Safe Housing Procedure.*

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Lead Safe Work Practices

- Maximo identifies that RRP work is required if the apartment is presumed or known to contain lead-based paint and 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.
- Maximo automatically creates a work order and on that work order is a banner alerting staff that they are required to follow the Renovation, Repair, and Painting (RRP) rules. For more information, see NYCHA Standard Procedure, *050:20:1, Lead Safe Housing Procedure*.

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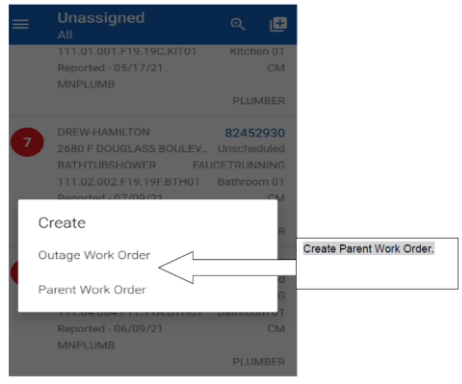
All NYCHA Employees Performing Work in Apartments

Any NYCHA employee performing work in a resident apartment who observes mold, excessive moisture, or water damage must create a parent mold inspection work order for every room with identified conditions on the handheld device or submit a paper mold work order to the Property Management office.



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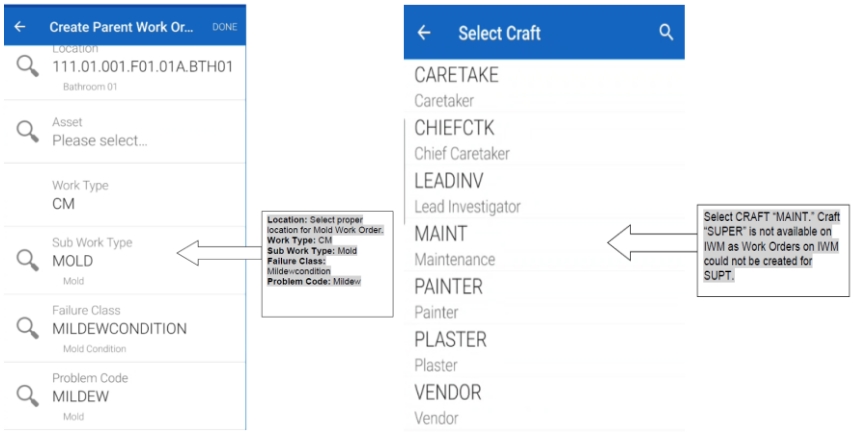
All NYCHA Employees Performing Work in Apartments

Creating an apartment mold inspection on the handheld continued



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SP Update – Reasonable Accommodations

- If a resident has a medical disability or breathing issue like asthma, and has mold or excessive moisture, the resident is entitled to reasonable accommodations from NYCHA. These accommodations may include:
  - The right to install and operate an additional air conditioning unit in their apartment if the electrical system permits an additional unit.
  - Temporary relocation during mold and moisture remediation.
  - Permanent relocation to other NYCHA housing if the apartment is uninhabitable and another apartment is available.
  - The use of enhanced dust suppression methods during mold remediation.
- Property management staff or CCC agents must check the reasonable accommodation flag on the Maximo mold work order or Siebel service request if a resident asks for a reasonable accommodation.

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NYCHA MOLD TRAINING

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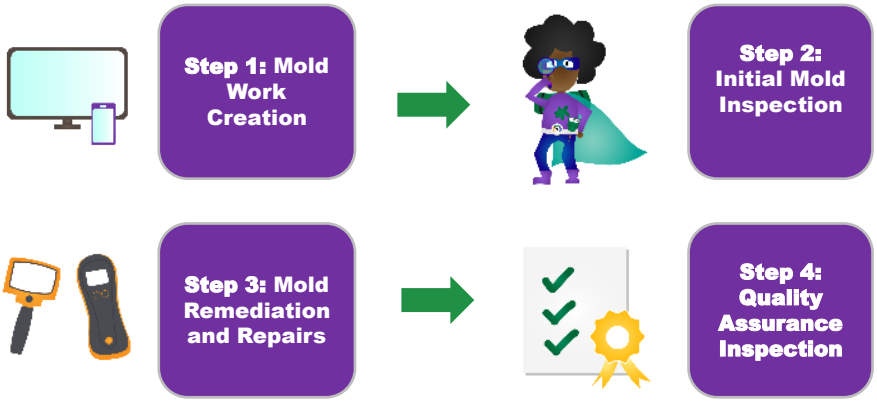
Mold Work Order Process



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Creating and Scheduling Mold Service Requests

Resident Service Requests to the CCC:

- When a resident calls the Customer Contact Center (CCC) to make a service request involving mold or mildew, a parent mold work order is created in Maximo. The resident is required to select a scheduled date for the initial inspection.
- The Baez Consent Decree states that mold inspections must be performed **within 4** days of the work order's creation.
- The borough planner schedules the inspection. The property manager or assistant property manager reschedules missed appointments.

NOTE: If NYCHA is not able to access the apartment to perform the inspection, the employee leaves NYCHA Form 042.727*, 48-Hour Notice for Health and Safety Repairs*, stating that they will return to the apartment within 48 hours to reattempt to perform the inspection and may use right of entry to access the apartment for that purpose.

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Creating and Scheduling Mold Service Requests

NYCHA Staff Initiates Mold Parent Work Orders:

- When property management staff or other NYCHA employees view mold conditions in a resident's apartment while performing other work or a mold inspection, **they must**:
  - Create a parent mold work order in Maximo using the iWM app on the handheld device.
  - Complete and submit a paper Maximo mold work order to the Property Management Office the same day.
- The property maintenance supervisor or assistant property maintenance supervisor ensures that property management office staff immediately creates a parent mold work order in Maximo from any submitted paper mold work order.

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Scheduling Appointments at the Development

- **Initial Mold Inspections and Assignments** - scheduled by skilled trades borough planners within 4 calendar days of the creation of the parent mold work order.
- **Quality Assurance (QA) Inspections** - scheduled by housing assistants, receptionists or other property management staff between 30-45 calendar days after the last child work order is closed. If the appointment is successfully scheduled, the property manager ensures that the appointment date is entered in Maximo.
- **Re-Inspections** - conducted immediately after failed QA by the mold inspector.

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Supervisory Review of all Mold Work Orders

- If an initial mold inspection created by NYCHA staff in Maximo is not scheduled, the property maintenance supervisor must:
  - Contact the resident to schedule the appointment for the initial mold inspection within 4 calendar days from the parent work order creation date.
  - If the resident is unable to schedule an appointment within 4 calendar days of the parent work order creation date, the property maintenance supervisor must advise the resident that:
    - NYCHA will visit the apartment that same day to perform the inspection.
    - NYCHA will return to the apartment within 48 hours to reattempt to perform the inspection if access is not granted and may use its Right of Entry to access the apartment.

NOTE: Initial inspections must be scheduled for a date within 4 calendar days of the creation of the parent mold work order.

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Scheduling Appointments at the Development

- If the resident or other adult is not home to allow access to the apartment for a scheduled mold related appointment, see NYCHA Standard Procedure 040:17:3, *Accessing Public Housing Apartments When Tenant Not Home to Address Deficiencies Related to Leaks, Mold, and Lead-Based Paint*, *Tenant Not Home Interim Guidance* (DGM20180005), and *Updated Tenant Not Home Guidance* (October 23, 2023).
- After following the tenant not home policy, NYCHA performs an initial mold inspection, and the inspector leaves the following in the apartment:
  - NYCHA Form 060.303, *Controlling Mold in Your Apartment*
  - NYCHA Form 060.845, *Mold Inspection Report*
  - A hard copy of the work order

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Preparing For The Mold Initial Inspection

Prior to visiting the apartment on the day of the initial inspection appointment, the inspector:

- Reviews the Maximo work order history for the apartment to determine if there is a history of mold or moisture complaints.
- Checks the mold inspection tool kit to ensure that the following instruments are in working order: anemometer, hygrometer, and moisture meter.

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Preparing For The Mold Initial Inspection

- Assigns a maintenance worker to accompany them 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. The maintenance worker must bring a borescope and tools appropriate for making wall-breaks.
- Must make a courtesy call to the resident via the handheld device on the way to the initial inspection to remind them of the inspection. If the resident does not answer the call, the inspector must still go to the apartment at the scheduled time.

NOTE: If the resident or other adult is not home to allow access to the apartment for a scheduled mold related appointment, see Section VIII.F, *Tenant Not Home Policy*.

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Preparing For The Mold Initial Inspection

Print the following documents to distribute to the residents:

- *Mold Inspection Receipt*
- *Controlling Mold in Your Apartment* form
- *48 Hour Notice for Health and Safety Repairs* form

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Mold Inspection Receipt

NEW YORK CITY HOUSING AUTHORITY
Public Housing Department
<<DEVELOPMENT NAME>>

Work Order #: _______
Date:___________

Mold Inspection Receipt

☐ NYCHA has not found mold, water damage, and/or a moisture level indicating excessive moisture and/or a possible leak and is closing your work order as "unfounded".

☐ NYCHA has found mold, water damage, and/or a moisture level indicating excessive moisture and/or a possible leak. NYCHA will send you the Mold Inspection Review form, which will include the findings of this inspection.

NYCHA is committed to completing all mold and excessive moisture work orders within 7 days for simple repairs and 15 days for complex repairs, starting from the date that the initial complaint is reported to the Customer Contact Center. If resident access is not provided for the scheduled follow-up appointments, NYCHA may use its right to access a tenant's apartment, immediately after providing 48 hours' notice, as indicated in the NYCHA Resident Lease Agreement.

A final Quality Assurance re-inspection will be conducted by NYCHA staff 30 to 45 days after the necessary work orders are completed to ensure that the mold and excessive moisture remediation work was done correctly and effectively.

A translation of this document is available in your management office.
La traducción de este documento está disponible en la Oficina de Administración de su residencial.
所居公房管理處備有文件譯本可供索取。
Перевод этого документа находится в Вашем домоуправлении.

Must take photo and save as *Mold Receipt*

115

Controlling Mold Flyer

NEW YORK CITY HOUSING AUTHORITY
PUBLIC HOUSING DEPARTMENT

Controlling Mold in Your Apartment

What is Mold?

The New York City Department of Health and Mental Hygiene (DOHMH) defines mold as a fungus that grows in damp areas like bathrooms and kitchens. Mold comes in various colors and textures and produces a musty, stale, or earthy odor. Mold can cause allergic reactions or other health problems in some people and can trigger asthma attacks.

How to Clean Mold Safely in Your Home:

According to DOHMH, mold should be cleaned/remediated by trained building maintenance staff. Mold on bathroom tile grout (around bathtubs) is common. Residents can control this growth with thorough and frequent use of household cleaners. Residents can also clean minor discoloration (gold or light-brown spots) that forms on bathroom walls/ceilings after showering to help prevent mold growth.

- However, residents with asthma or mold allergies should **not** conduct this work.
- The use of bleach can be hazardous and should be used **only** in diluted solutions (1 part bleach to 10 parts water).

Tips for Preventing Mold:

Mold growth is **always** the result of excessive moisture, which can occur from:

1) Rainwater leaking through roofs or entering through building walls.
2) Plumbing leaks (either from within the apartment or from above).
3) Condensation (drops of water) that forms on surfaces when warm, moist (humid) air comes into contact with cooler surfaces.
4) Lack of adequate ventilation (air flow).

Rainwater, plumbing leaks, and broken rooftop fans are not within residents' control. These problems require repair by trained staff. However, **condensation (drops of water and steam) is a common cause** of excessive moisture that promotes mold, especially in bathrooms.

Here's what you can do to limit excessive moisture and the potential for mold in your bathroom:

- **Exhaust ventilation** is the key to controlling high humidity in bathrooms. Make sure your bathroom exhaust works by holding a piece of tissue to the bathroom exhaust grill to ensure there is suction (the tissue should stick to grill). If there is no suction, call the Customer Contact Center.

1 of 2
NYCHA 060.303 (Rev. 12/13/18v2) **CLEAN RECOMMENDED CONTENT - CONTROLLING MOLD**

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- If your bathroom exhaust vent grill is clogged with dust, report the issue by calling the Customer Contact Center.
- Don't use shower racks/clothes lines above bathtubs.
- Open bathroom windows and doors after showering.
- In the summertime, use an air conditioner.
- Open windows slightly when the weather allows.
- Request repairs for leaky plumbing or other water leaks as soon as possible.

If you have mold growth, excessive moisture, or a plumbing or rainwater leak, please call the Customer Contact Center at 718-707-7771 to report the issue.

A translation of this document is available in your management office.
La traducción de este documento está disponible en la Oficina de Administración de su residencial.
Перевод этого документа находится в Вашем домоуправлении.
所居公房管理處備有文件譯本可供索取。
所居公房管理处备有文件译本可供索取。

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Inspection Procedure

- Initial inspections are performed using the handheld device.
- If a handheld device is not operating during the initial inspection, the inspector must record the inspection results on a paper mold inspection work order and immediately enter the results into Maximo following the initial inspection.

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NYCHA MOLD TRAINING

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Mold Inspections

The mold inspection is the most important part of the mold remediation process. This is where a mold inspectors' skill, knowledge and training comes into play.

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Types of Inspections

- **Initial Mold Inspections and Assignments** - scheduled by skilled trades borough planners within 4 calendar days of the creation of the parent mold work order.
- **Quality Assurance (QA) Inspections** - scheduled by housing assistants, receptionists or other property management staff between 30-45 calendar days after the last child work order is closed. If the appointment is successfully scheduled, the property manager ensures that the appointment date is entered in Maximo.
- **Re-Inspections** - conducted immediately after failed QA by the on-site Mold Inspector.

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Initial Inspection

- Focus on presence and location of mold.
- Determine the extent of hidden mold and the mold's origin (root cause).

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Initial Inspection

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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Discussing The Mold Condition With The Resident

Upon arriving at the apartment, the inspector:

- Makes best efforts to interview an adult listed on the household composition about any history of mold and moisture in the apartment.
- Explains the inspection process, identification of root cause and mold repair and remediation steps, including the timelines for each.
- Distributes *Controlling Mold* flyer.
- Adds new information to IWM notes.

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Visual Inspection

- Observe accessible interior surfaces using common inspection tools, notes and photographs.
- Create limited penetrations (less than 1 sq. ft.) as needed.

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Visual Inspection

- Wet organic substrates are the most common sites for mold growth, but even elevated relative humidity or dust on hard surfaces might support growth.
- The inspector should look for any evidence of water from leaks or condensation.

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Conducting the Initial Inspection

The inspector conducts the initial inspection using the handheld device.

- Visually inspect the room identified in the mold work order, observe mold growth and record the estimated square footage of mold on each wall (1-4), floor, ceiling, etc.
- Identifying walls in the mold inspection:
  - Wall 1: the wall with the door.
  - Wall 2: the wall to your left upon entering.
  - Wall 3: the wall to your right upon entering.
  - Wall 4: the wall you are facing upon entering.

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Visual Inspection – Where to Look

- Focus on areas with moisture or water stains.
- All surfaces should be closely inspected, especially:
  - Seams and crevices along the base of walls.
  - Edges of carpets.
  - Seams of wall fabrics.
  - The base of all window and door jambs.
  - Tops of walls.
  - Joints in ceiling materials.
  - Airstream surfaces of accessible air.
  - Conditioning or humidification equipment.

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Tips on how to calculate Mold Square Footage

- If you have a measuring tape or ruler, use it to measure the length and width of the mold affected area in feet or inches.
- If the mold is in multiple spots, measure each area separately and add them up.
- Use bathroom tiles as a visual guide. Standard NYCHA bathroom tiles are ~ 12 X 12 inches (1 sq. ft.). To estimate mold size in other rooms, compare it to the number of tiles it would cover.
- Use a standard letter-sized paper (8 ½ X 11) in the photo(s) uploaded to show perspective of the amount of mold.
- Calculate square footage with this formula: Length (ft.) X Width (ft.) = square footage. If mold covers an area that is 4 ft. long and 2 ft. wide: 4 X 2 = 8 sq. ft.
- If mold appears on the bathroom ceiling and the total ceiling area is 36 sq. ft., then mold covering half the ceiling would be ~ 18 sq. ft.

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Visual Inspection - Ventilation

- Inspection should include ventilation systems where present.
- Dirty ventilation grills and ducts might be the source of contamination, or the means of its distribution between spaces, or might indirectly contribute to the concentration of indoor air contaminants by providing inadequate ventilation.

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Visual Inspection - Ventilation Ducts

Debris build up is common and fungal growth can attach to that debris. We must visually verify that debris and dust have not accumulated in the ducting, providing a growth platform for mold.

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Procedure for Inspection of Wall Cavities

Where visible contamination extends up into the wall cavity above, and where leaks from overhead roofs, decks, windows, or pipes are suspected, smaller openings no larger than 1 sq. ft. should be made high on walls or ceilings to identify the leak's source.

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Procedure for Inspection of Wall Cavities

- In bathrooms, remove the mirror cabinet or the escutcheons plate then make a penetration that can be covered when re-installing.

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Procedure for Inspection of Wall Cavities

Mold growth is likely to be on the paper covering the back of sheetrock in areas that:

- Measure wet.
- Display water damage.
- Have a reported history of water damage.

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Conducting the Initial Inspection - Moisture Meter

- Use the moisture meter to measure the walls, floor, ceiling, and components in the room for subsurface moisture and record if a measurement is equal to or greater than 599 (i.e. a wet measurement):
  - Take multiple measurements of each surface or component and record if a measurement is equal to or greater than 599.
  - Inspect the chase wall, or any other areas displaying water damage, and all surrounding areas, such as the ceiling, floors, and other walls.

NOTE: The moisture meter must be held flush against the wall and not held at an angle while taking measurements.

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Conducting the Initial Inspection - Moisture Meter

- Record the highest moisture water reading for each affected surface in the room, whether the water damage or mold can be seen or not (for example: Wall 1, Wall 2, Ceiling, etc.):
  - If you see water damage or mold, use a moisture meter every 6 inches in all directions—side to side and up and down.
  - Keep checking until you're at least 2 ft. past the damaged area, and the meter reads below 599.
  - If the surface shows no visible water damage or mold growth, the moisture meter reading should be taken in intervals of 1 ft. in each direction.

NOTE: The moisture meter must be held flush against the wall and not held at an angle while taking measurements.

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General Evaluation Of Room Conditions

- If a mold, water damage, or moisture is found, the inspector must perform a general evaluation of the room and the opposing common walls in adjoining rooms and common areas.

NOTE: When checking shared walls between rooms, the inspector should check both sides. If mold is found in a neighboring room and it seems to come from a different cause, the inspector must create a new mold work order on their handheld device. This new work order should be completed during the initial inspection.

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General Evaluation Of Room Conditions

The inspector:

- Records the surface structure (for example concrete, plaster, sheetrock) and framing structure (wood, steel) of the room's walls, floor, ceiling, and component(s).
- Uses the hygrometer to take a humidity reading of the room and records the humidity level.

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General Evaluation Of Room Conditions

- If the room is a kitchen or bathroom, indicate if there is mechanical ventilation:
  - If there is mechanical ventilation, check the ventilation using the anemometer to take an air flow measurement in cubic ft. per minute and record the result in the handheld device.
  - If the cubic feet per minute is less than 25, Maximo automatically generates child work orders to clean the horizontal vent duct work and to check the roof fan.

NOTE: The user must ensure the anemometer is calibrated properly by using a foam template to take the CFM measurement during set up.

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General Evaluation Of Room Conditions

- If there is a window:
  - The inspector checks that the window is operating properly and records the result in the handheld.
  - Maximo automatically generates a child work order to repair the window if it is not operating properly.
- If there is no window, the inspector does not answer the question and does not indicate “no” on the work order.
- If there is no exhaust fan, the inspector does not answer the question and does not indicate “no” on the work order.

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General Evaluation Of Room Conditions

- If the room is a bathroom:
  - Check if the toilet base and shower enclosure are caulked and records the results in the handheld device.
  - Maximo automatically generates a child work order to caulk the toilet base and/or shower enclosure if they are not caulked.
- Visually inspects the room for signs of pest infestation and records the results in the handheld device.
  - Maximo automatically generates a child work order for an exterminator when there is evidence of pests.

NOTE: If an employee identifies potential asbestos in a unit, they refer to Compliance Advisory Alert #34, Asbestos Containing Material In Apartments, and continue performing the inspection.

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Your Mold Inspection is Key

To investigate and select the most correct root cause(s):

- Use your knowledge and experience to investigate.
- Use your eyes to see what's in front of you.
- Use your words to describe what you see via notes.
- Use two photos to upload and show what you have discovered.

This will ensure that the correct repairs will be done to RESOLVE the issue.

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Mold Root Causes

- The fundamental reason for the occurrence of mold, water damage, or moisture.
- The root cause could be the source of water or excessive moisture (such as leaking pipes or fixtures, condensation) or the lack of ventilation (such as blocked exhaust ducts, closed windows).
- Identifying and correcting the root cause in response to a mold complaint is essential to ensuring that the mold or moisture condition related to that root cause does not recur.

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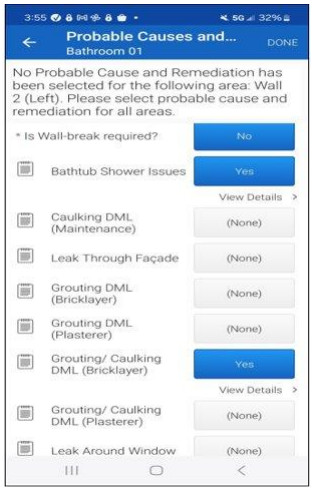
Identifying Mold Root Causes



The Inspector:

- Determines the probable root cause(s) for any wall, floor, ceiling, or component having mold, water damage, or moisture (a wet measurement).
- Selects up to 4 causes on the handheld device.

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Mold Root Causes

NYCHA has identified twenty-nine (29) Root Causes are organized by <u>five (5) general categories</u> how the problem was caused.

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

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

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.

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.

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

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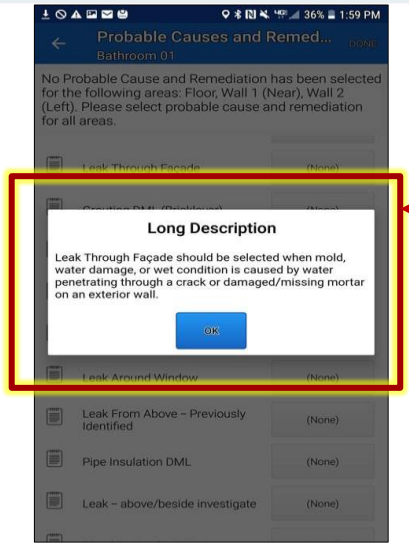
Mold Root Causes



iWM App will have a pop-up option to view a definition of each Root Cause to help you made an informed decision.

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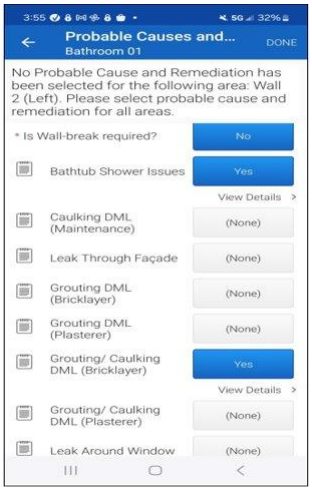
Identifying Mold Root Causes



The Inspector then:

- Selects the ceiling, wall(s), floor, or component(s) that have the same probable root cause.
- In the example (left), both the mold on the ceiling and water damage on the wall have a probable root cause of Bathtub Shower Issues.
- Indicates if a wall break is required to inspect or correct the probable root cause.

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Wall Breaks

- If a wall break is required, the inspector must perform the wall break with the assistance of a maintenance worker as part of the initial mold inspection.
- The maintenance or other trained staff should make an initial small wall break of approximately 1 sq. inch to inspect the conditions in the wall cavity with the help of the borescope.

The staff should:

- Uses the moisture meter to identify the location for the initial wall break.
- The initial wall break should be made as close as possible to the location of the suspected root cause. Or;
- The initial wall break could also be made behind the medicine cabinet or other central area in the wall if the maintenance worker or other trained staff is not able to identify the location of the suspected root cause.

NOTE: When possible, NYCHA employees should avoid creating the wall break directly on areas that display visible mold growth.

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Enlarging the Initial Wall Break

- Once the root cause is identified, the maintenance worker or other trained staff enlarges the initial wall break to provide full visibility to the root cause and access to perform the repair (temporary or permanent) as outlined in the SP 050:25:2, *Leak And Moisture Control In NYCHA Residential Buildings*.
- An initial wall break must be enlarged to at least 1 sq. ft. to provide access to the plumbing pipes. In some instances, the wall break might need to be up to 2 sq. ft.
- The staff must make a temporary repair as outlined in the SP 050:25:2, *Leak And Moisture Control In NYCHA Residential Buildings*.

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Wall Breaks Instructions

- Instruct the resident to move any personal property in the affected area or room before initiating work.
- Cover all horizontal surfaces in the work area (e.g., countertops, cabinets, etc.) with poly-sheeting, and ensure all drawers are sealed and door(s) are closed.
- Close and covers the ventilation system (e.g., bathroom vents) in the work area as outlined in Standard Procedure 050:20:1, *Lead Safe Housing Procedure*.
- Mark the area of the wall break using a straightedge and marker.
- **For Sheetrock developments:** Create a wall break using a small mechanical sheetrock saw or alternative (e.g., a utility knife or standard sheetrock saw) while operating a HEPA vacuum at the point of dust generation.
- Follow instructions outlined in the SP 050:25:2, *Leak And Moisture Control In NYCHA Residential Buildings, Temporary Plumbing Repairs*.

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Wall Breaks RRP requirements

- Maximo automatically creates a work order, and, on that work, order is a banner to alert staff if they are required to follow the Renovation, Repair, and Painting (RRP) rules.

NOTE: 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 sq. Ft. of a painted surface per room, or more than 10% of the total surface area on an interior or exterior type of component with a small surface area.

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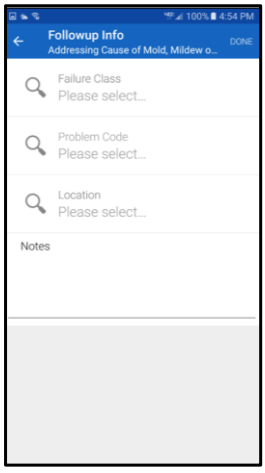
Identifying the Probable Root Causes and Remediation Methods



If the probable root cause ***is not*** Resident – Cause:

- Selects one or more Failure Class/Problem Codes, as applicable, from the limited set of options in the dropdown menu for that probable root cause.
- Selects the appropriate craft required to make the repair for each Failure Class/Problem Code selected.

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Identifying the Probable Root Causes and Remediation Methods

If the probable root cause ***is*** Resident – Cause

- Selects on the handheld device the specific instruction provided to the resident in Section VIII.B.5 below for each probable root cause that is Resident – Cause.
- Selects the remediation method and craft from a dropdown menu of limited options for the selected wall(s), floor, ceiling, or component(s).

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Identifying the Probable Root Causes and Remediation Methods

NOTE: For clarity, the inspector must record key information obtained during the inspection in the Notes field of the iWM app on an unfounded work order.

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Taking Photos Guidance

Upload two clear pictures of the condition:

- A close up.
- A wide shot with a standard letter paper size (8.5 X 11 in.) in the photos to show the relative size of the condition.

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Picture Requirement - Example

Close Up: Kitchen

Full View: Kitchen

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Picture Requirement - Example

Close-Up: Living Room Ceiling

Full View: Living Room Ceiling

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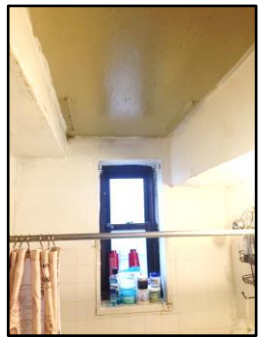
Knowledge Check

Do these pictures fit the picture guidance?

Close Up: Bathroom Window Frame

Close Up: Bathroom Ceiling



Full View: Bathroom Wall

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Reviewing the Initial Inspection Results with the Resident

When Mold, Water Damage, or a Moisture Condition is Identified the Inspector:

- Gives NYCHA Form 060.303, **Controlling Mold in Your Apartment**, to the resident and reviews with the resident the general recommendations on the form for preventing and cleaning mold and the importance of identifying and correcting the root cause(s) of mold to avoid recurrence.
- Gives NYCHA Form 060.845**, Mold Inspection Receipt**, to the resident and reviews the following with the resident:
  - The initial mold inspection outcome and the inspection's findings (founded or unfounded).
  - The requirement that NYCHA perform a quality assurance mold inspection between 30-45 calendar days after all work is completed.
  - The required timeframe for the completion of all work.
  - The name and contact information of the ombudsperson.

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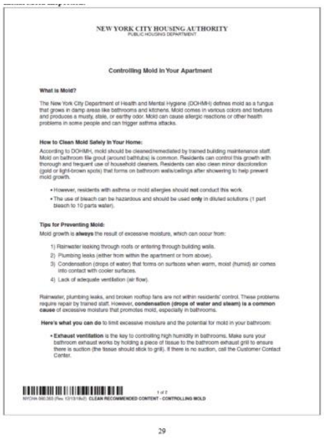
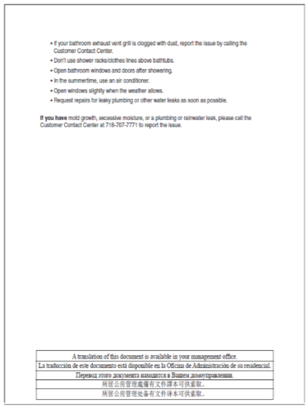
Forms to Resident

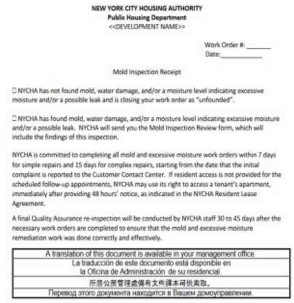


NEW YORK CITY HOUSING AUTHORITY

Controlling Mold in Your Apartment



NYCHA Form 060.303, *Controlling Mold in Your Apartment*



NEW YORK CITY HOUSING AUTHORITY
Public Housing Department
<<DEVELOPMENT NAME>>

Work Order #: ______
Date:___________

Mold Inspection Receipt

☐ NYCHA has not found mold, water damage, and/or a moisture level indicating excessive moisture and/or a possible leak and is closing your work order as "unfounded".

☐ NYCHA has found mold, water damage, and/or a moisture level indicating excessive moisture and/or a possible leak. NYCHA will send you the Mold Inspection Review form, which will include the findings of this inspection.

NYCHA is committed to completing all mold and excessive moisture work orders within 7 days for simple repairs and 15 days for complex repairs, starting from the date that the initial complaint is reported to the Customer Contact Center. If resident access is not provided for the scheduled follow-up appointments, NYCHA may use its right to access a tenant's apartment, immediately after providing 48 hours' notice, as indicated in the NYCHA Resident Lease Agreement.

A final Quality Assurance re-inspection will be conducted by NYCHA staff 30 to 45 days after the necessary work orders are completed to ensure that the mold and excessive moisture remediation work was done correctly and effectively.

A translation of this document is available in your management office.
La traducción de este documento está disponible en la Oficina de Administración de su residencial.
所居公房管理處備有文件譯本可供索取。
Перевод этого документа находится в Вашем домоуправлении.

Form 060.845, *Mold Inspection Receipt*

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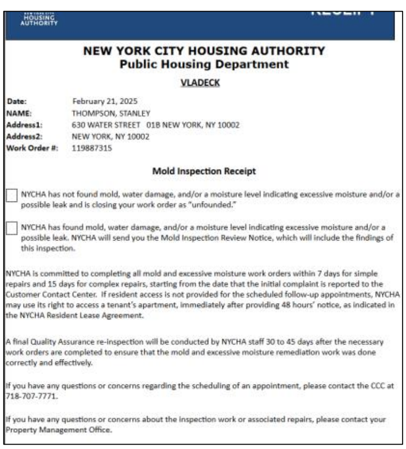
Forms to Resident



NEW YORK CITY HOUSING AUTHORITY
Public Housing Department
VLADECK

Date:	February 21, 2025
NAME:	THOMPSON, STANLEY
Address1:	630 WATER STREET 01B NEW YORK, NY 10002
Address2:	NEW YORK, NY 10002
Work Order #:	119887315

Mold Inspection Receipt

☐ NYCHA has not found mold, water damage, and/or a moisture level indicating excessive moisture and/or a possible leak and is closing your work order as "unfounded."

☐ NYCHA has found mold, water damage, and/or a moisture level indicating excessive moisture and/or a possible leak. NYCHA will send you the Mold Inspection Review Notice, which will include the findings of this inspection.

NYCHA is committed to completing all mold and excessive moisture work orders within 7 days for simple repairs and 15 days for complex repairs, starting from the date that the initial complaint is reported to the Customer Contact Center. If resident access is not provided for the scheduled follow-up appointments, NYCHA may use its right to access a tenant's apartment, immediately after providing 48 hours' notice, as indicated in the NYCHA Resident Lease Agreement.

A final Quality Assurance re-inspection will be conducted by NYCHA staff 30 to 45 days after the necessary work orders are completed to ensure that the mold and excessive moisture remediation work was done correctly and effectively.

If you have any questions or concerns regarding the scheduling of an appointment, please contact the CCC at 718-707-7771.

If you have any questions or concerns about the inspection work or associated repairs, please contact your Property Management Office.

Must take photo and save as *Mold Receipt*

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Reviewing the Initial Inspection Results with the Resident

- Indicates in the handheld device that NYCHA Form 060.845, *Mold Inspection Receipt*, was provided to and discussed with the resident.
- Advises the resident to contact the neighborhood planner to coordinate any follow-up appointments needed for the following skilled trades: Bricklayers, Carpenters, Electricians, Exterminators, Glaziers, Painters, Plasterers, Plumbers, Roofers.

NOTE: If the resident does not contact the neighborhood planner, the neighborhood planner schedules the work anyway and makes best efforts to contact the resident. They check the child work orders twice a week and determine when to schedule them.

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Reviewing the Initial Inspection Results with the Resident

Advises the resident that NYCHA will mail them NYCHA Form 060.846*, Mold Inspection Review*, which details the following information:

- The initial mold inspection and probable root cause findings.
- The next step(s) to remediate the mold, excessive moisture, or related condition and correct the root cause.
- The specific instruction(s) on how to correct the probable root cause if the probable root cause is Resident – Cause.
- The requirement that NYCHA perform a quality assurance mold inspection between 30-45 calendar days after all work is completed.
- The required timeframe for the work.
- The name and contact information of the Ombudsperson.
- The contact information for the neighborhood planner and Property Management Office to schedule repairs.

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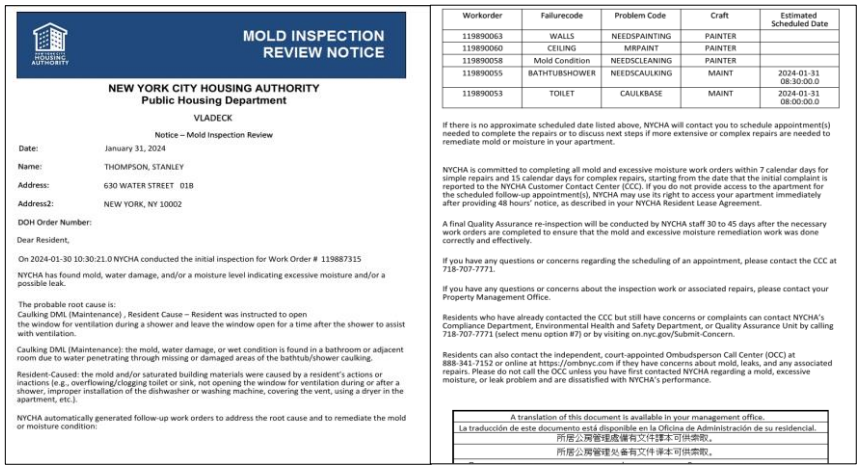
Mold Inspection Review



MOLD INSPECTION REVIEW NOTICE

NEW YORK CITY HOUSING AUTHORITY
Public Housing Department

VLADECK

Notice – Mold Inspection Review

Date: January 31, 2024

Name: THOMPSON, STANLEY

Address: 630 WATER STREET 01B

Address2: NEW YORK, NY 10002

DOH Order Number:

Dear Resident,

On 2024-01-30 10:30:21.0 NYCHA conducted the initial inspection for Work Order # 119887315

NYCHA has found mold, water damage, and/or a moisture level indicating excessive moisture and/or a possible leak.

The probable root cause is:
Caulking DML (Maintenance) , Resident Cause – Resident was instructed to open the window for ventilation during a shower and leave the window open for a time after the shower to assist with ventilation.

Caulking DML (Maintenance): the mold, water damage, or wet condition is found in a bathroom or adjacent room due to water penetrating through missing or damaged areas of the bathtub/shower caulking.

Resident-Caused: the mold and/or saturated building materials were caused by a resident's actions or inactions (e.g., overflowing/clogging toilet or sink, not opening the window for ventilation during or after a shower, improper installation of the dishwasher or washing machine, covering the vent, using a dryer in the apartment, etc.).

NYCHA automatically generated follow-up work orders to address the root cause and to remediate the mold or moisture condition:

Workorder	Failurecode	Problem Code	Craft	Estimated Scheduled Date
119890063	WALLS	NEEDSPAINTING	PAINTER	
119890060	CEILING	MRPAINT	PAINTER	
119890058	Mold Condition	NEEDSCLEANING	PAINTER	
119890055	BATHTUBSHOWER	NEEDSCAULKING	MAINT	2024-01-31 08:30:00.0
119890053	TOILET	CAULKBASE	MAINT	2024-01-31 08:00:00.0

If there is no approximate scheduled date listed above, NYCHA will contact you to schedule appointment(s) needed to complete the repairs or to discuss next steps if more extensive or complex repairs are needed to remediate mold or moisture in your apartment.

NYCHA is committed to completing all mold and excessive moisture work orders within 7 calendar days for simple repairs and 15 calendar days for complex repairs, starting from the date that the initial complaint is reported to the NYCHA Customer Contact Center (CCC). If you do not provide access to the apartment for the scheduled follow-up appointment(s), NYCHA may use its right to access your apartment immediately after providing 48 hours' notice, as described in your NYCHA Resident Lease Agreement.

A final Quality Assurance re-inspection will be conducted by NYCHA staff 30 to 45 days after the necessary work orders are completed to ensure that the mold and excessive moisture remediation work was done correctly and effectively.

If you have any questions or concerns regarding the scheduling of an appointment, please contact the CCC at 718-707-7771.

If you have any questions or concerns about the inspection work or associated repairs, please contact your Property Management Office.

Residents who have already contacted the CCC but still have concerns or complaints can contact NYCHA's Compliance Department, Environmental Health and Safety Department, or Quality Assurance Unit by calling 718-707-7771 (select menu option #7) or by visiting on.nyc.gov/Submit-Concern.

Residents can also contact the independent, court-appointed Ombudsperson Call Center (OCC) at 888-341-7152 or online at https://ombnyc.com if they have concerns about mold, leaks, and any associated repairs. Please do not call the OCC unless you have first contacted NYCHA regarding a mold, excessive moisture, or leak problem and are dissatisfied with NYCHA's performance.

A translation of this document is available in your management office.
La traducción de este documento está disponible en la Oficina de Administración de su residencial.
所居公屋管理處備有文件譯本可供索取。
所居公屋管理处备有文件译本可供索取。

NOTE: Mold Inspection Review Form is provided to resident for FOUNDED INSPECTIONS only.

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When Mold Condition is Unfounded

- Discuss the initial inspection findings with the resident.
- Give NYCHA Form 060.303, *Controlling Mold in Your Apartment* to the resident and review with the resident the general recommendations on the form for preventing and cleaning mold.
- Request that the resident signs the unfounded work order on the handheld device.
  - Indicate in the handheld device if the resident refused to sign or if the resident disagrees that the mold condition is unfounded.
- Provide the *Mold Inspection Receipt* with inspection findings.
- Close the mold work order as Unfounded.
- Take photos of the condition(s) reported by the resident as mold, including multiple close-up photos from different angles of the condition(s) and at least one photo of the larger area and upload them to Maximo.

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Inspection Timeframes

- There are no determined times to complete an inspection:
  - Mold inspection time frames vary based upon the complexity of the condition, the root cause(s) and each individual case/each inspection is situation based.
- Each inspection should include the following steps, which generally will take more than 10 minutes:
  - Time to interview resident.
  - Perform a visual inspection.
  - Utilize TESTO instruments.
  - Discuss inspection results with resident.

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Conclusion

- Effective problem evaluation will depend on the skill and experience of the inspector but will also benefit from consistent use of standard protocols that can be adapted to individual mold condition needs.
- Various steps of inspection and investigation may be required, depending on the complexity and extent of the problem.
- All inspection efforts require identification of the extent and location of mold growth and determination of root cause(s).

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End of Day 1

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NYCHA MOLD TRAINING

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Measurement Instruments

- On-site testing equipment that indicates if moisture or ventilation problems may be present.
- Used to help identify root causes.
- Provides immediate information.
- Inspector must be able to operate and understand data.

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NYCHA's Smart Device Policy

The smart device provided to you by NYCHA is the property of NYCHA and is solely for use authorized by NYCHA:

- There is no reasonable expectation of privacy when using your NYCHA smart device.
- Any information saved on any smart device owned by NYCHA is the property of NYCHA and may be subject to monitoring.
- Unauthorized altering of or tampering with your NYCHA smart device is prohibited.

This information can be found in section 17 in the NYCHA Human Resource Manual

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Inspection Instruments

- Moisture Meter
- Anemometer
- Hygrometer
- Borescope

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Field Measurements

- Moisture meter – measures moisture content in building materials
- Hygrometer – measures humidity levels
- Anemometer – measures air flow in CFM
- Borescope – measures behind walls and other cavities

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Moisture Meters

- Moisture meters measure/monitor moisture levels in building materials and may be helpful for measuring moisture in building materials following water damage.
- Moisture meters can be used on materials such as sheetrock, plaster, wood, brick, and concrete.
- They also can be used to monitor the progress of drying damaged materials. These direct reading devices have a thin probe that is inserted into the material to be tested or pressed directly against the surface of the material.

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Moisture Meters

Protimeter Survey Master

Pin-probe Mode: Measurements given as % moisture.

NOTE: Pin-probe readings can provide additional information but are not used during the root-cause assessment.

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Wet Reading

NYCHA building material is considered “wet” when the moisture meter reading is equal to or greater than 599 (on a scale of 0 to 999):

- Inspect the chase, or any other area(s) displaying water damage, and all surrounding areas (e.g., celling, floor, and other walls).
- Take multiple moisture meter reading to find subsurface moisture or source of leak.
- Record the highest moisture meter reading for each affected surface in the room (e.g., Wall 1, Wall 2, Ceiling, etc.) that is both seen and unseen.
- Pay special attention to areas above toilets and showers/bathtubs.

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Wet Reading

- If the surface displays visible water damage or mold growth, the moisture meter reading should be taken in 6” (inch) interval in each direction, horizontal and vertical, and continue to the point of at least of 2 ft. beyond any visible water damage or mold growth until moisture meter reading is below 599.

- If the surface displays no visible water damage or mold growth, the moisture meter reading should be taken 1’ (foot) interval in each direction.

NOTE: The moisture meter must be held flush against the wall and not held at an angle while taking measurements.

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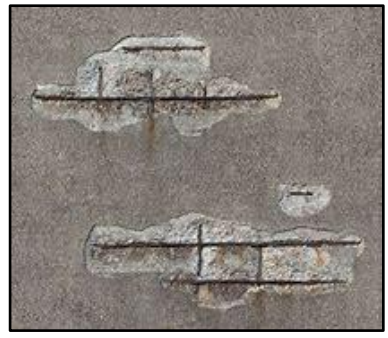
CAUTION - False Reading

- The moisture meter is calibrated to detect moisture in building materials composed of organic matter. The meter may report a “999” or other false reading if the instrument detects metal, wire or tile.
- If the inspector suspects a false reading, (e.g. if the moisture meter makes contact with rebar in a Reinforced Concrete Cement (RCC) structure) additional readings should be taken in 6 inch intervals in each direction.



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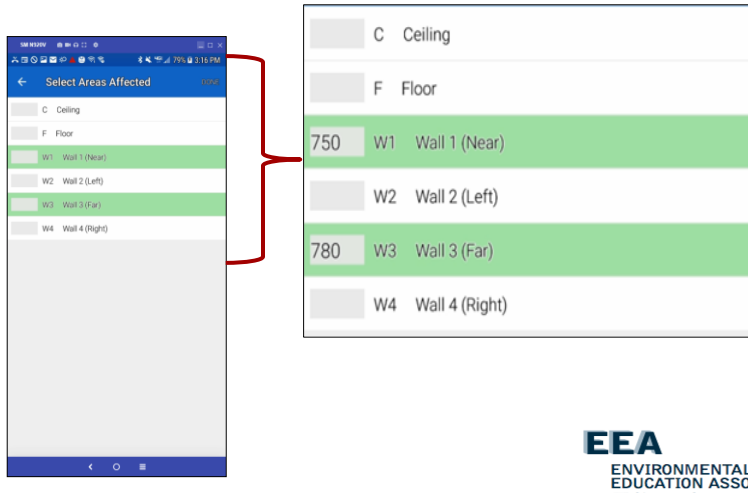
Wet Reading – iWM View

iWM will prompt for moisture measurements for surfaces where the measurement is over 599.



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Wet Reading– Example

	C	Ceiling
	F	Floor
750	W1	1 (Near)
	W2	Wall 2 (Left)
780	W3	3 (Far)
	W4	Wall 4 (Right)

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Testo Instruments

- Anemometer - air flow in CFM
- Hygrometer - humidity levels

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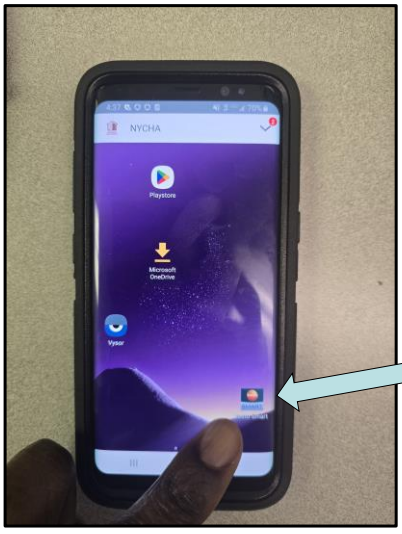
Instructions for Using the Testo App



Switching On and Off

1. Open the Testo App (Version 26.9.6.82468) on your NYCHA issued handheld device.

Select TESTO

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Anemometers

- Used for measuring the speed of air.
- Vane anemometers use a remote fan (vane) that freely rotates in response to air flow.

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Anemometers

- NYCHA uses the Testo Vane instrument.
- Must be set to Cubic Feet per Minute (CFM) - unit for Air Volume measurements.
- Must record length and width of opening in inches.
- Must be calibrated to 55% free air.

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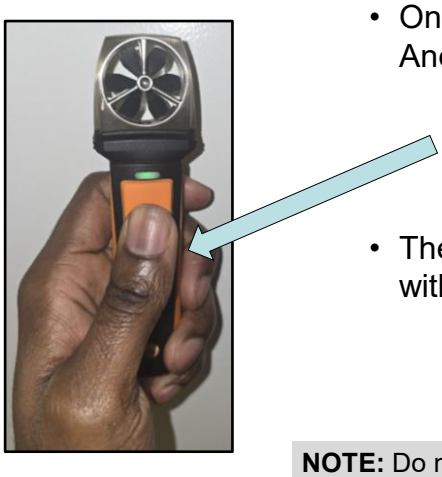
Instructions for Using the Anemometer



- Once the Testo App is open, turn on your Anemometer using the instructions below:
  - Press the large button shown in the image below.
  - The LED light should start blinking yellow.
- The Testo device should automatically pair with your NYCHA issued handheld device:
  - You will know the Anemometer has successfully paired when the LED light turns green.

NOTE: Do not operate more than one Testo device at a time.

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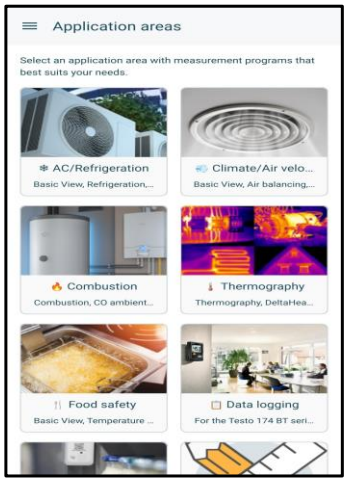
Instructions for Using the Anemometer



Select Climate/Air velocity

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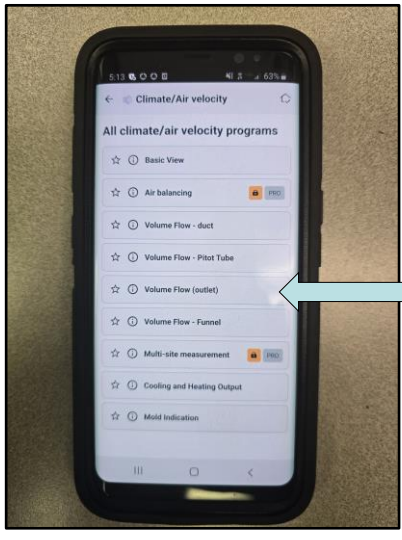
Instructions for Using the Anemometer



Select Volume Flow (outlet)

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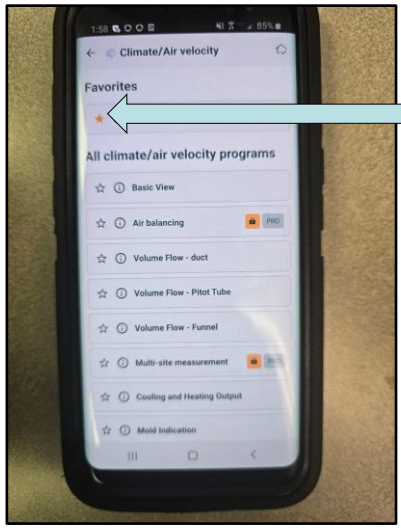
Instructions for Using the Anemometer



Select ★ to save as favorite

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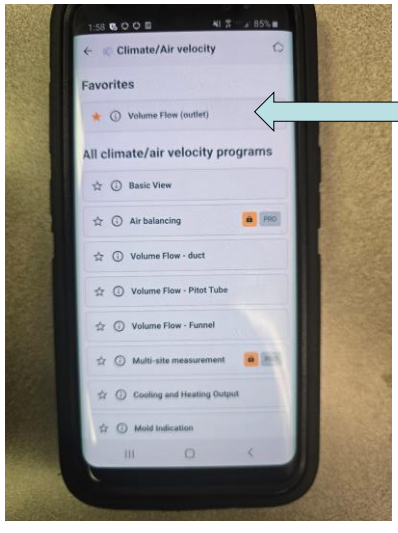
Instructions for Using the Anemometer



Select Volume Flow (outlet)

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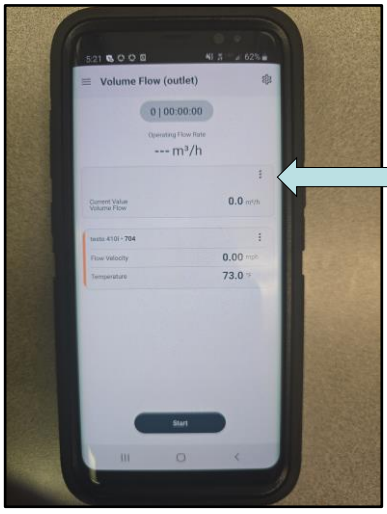
Instructions for Using the Anemometer



Select the three dots

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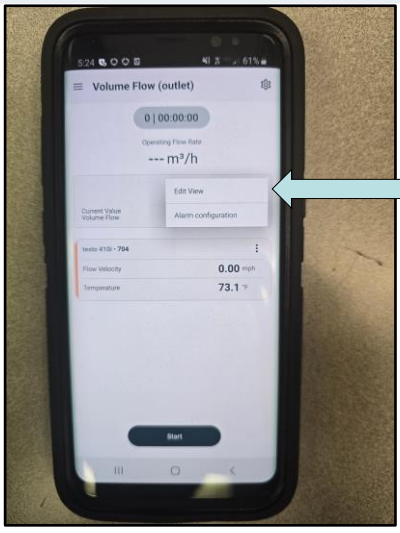
Instructions for Using the Anemometer



Select Edit View

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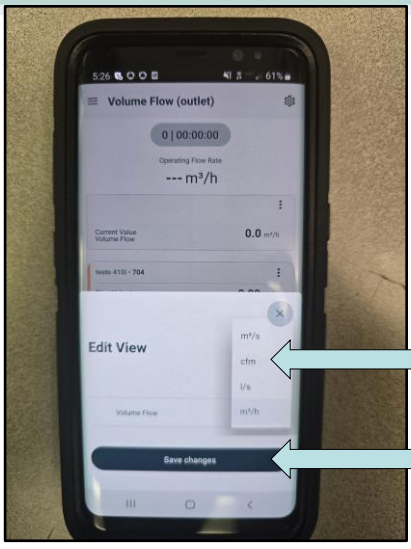
Instructions for Using the Anemometer



Select CFM

Save changes

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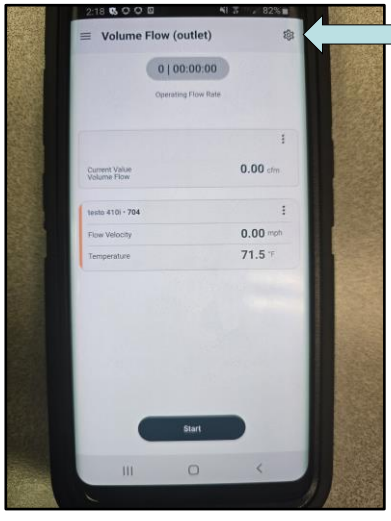
Instructions for Using the Anemometer



Select Settings

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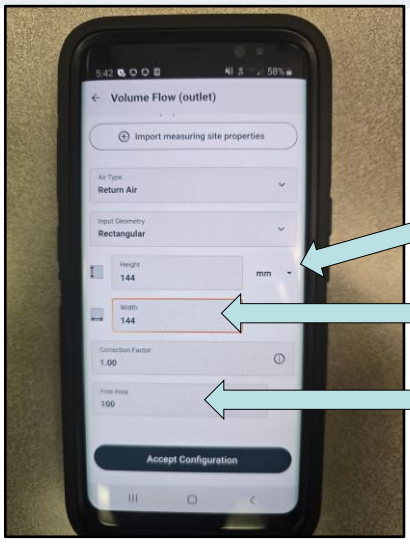
Instructions for Using the Anemometer



Select inches

Change size of vent (length & width)

Change Free Area to 55%

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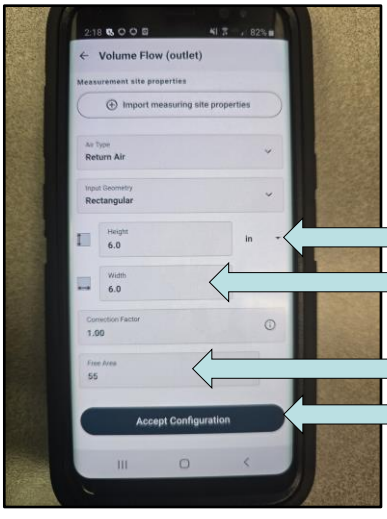
Instructions for Using the Anemometer



Here

Here

Here

Select Accept Configuration

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Instructions for Using the Anemometer

Taking a Flow Measurement

To take a measurement, place the anemometer so it is flush with the face of the air duct grill:

- Your results will be displayed on the Volume Flow (outlet) screen (Pictured Below).
- To freeze a flow measurement, hit the Start and Stop button at the bottom of your screen.

Selecting the Start and Stop button multiple times will allow you to save multiple readings.

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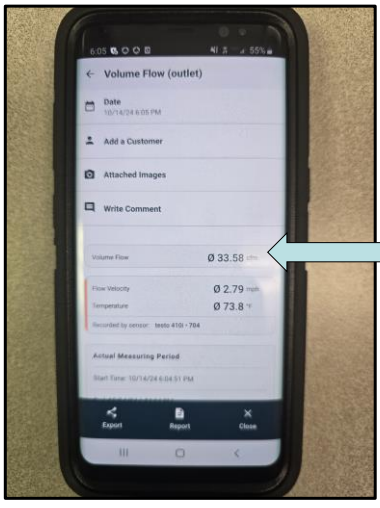
Instructions for Using the Anemometer



Type in Volume Flow in IWM App

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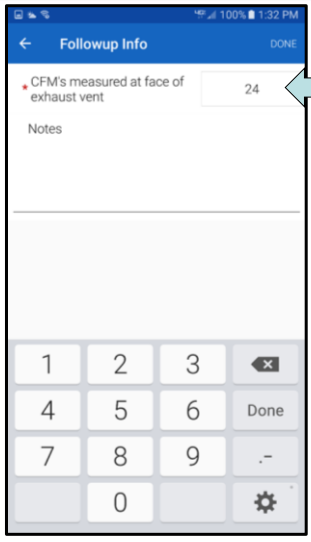
Instructions for Using the Anemometer



Input volume flow in IWM App

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Hygrometer

- A hygrometer is used to measure moisture content in the atmosphere.
- Humidity measurement instruments usually rely on measurements of some other quantity such as temperature, pressure, mass or a mechanical or electrical change in a substance as moisture is absorbed.
- By calibration and calculation, these measured quantities can lead to a measurement of humidity.
- Results are reported in the app.

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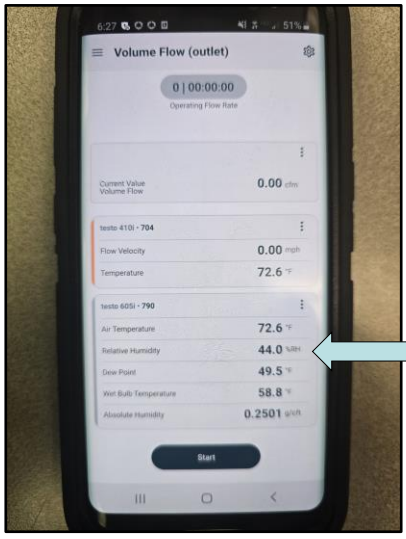
Instructions for Using the Hygrometer



Type the RH% in IWM App

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Borescope

- A borescope is a hand-held tool that allows users to see potential mold problems inside walls, ceiling plenums, crawl spaces, and other tight areas.
- It consists of a video camera on the end of a flexible “snake.”
- No major drilling or cutting of dry wall is required.

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Borescope Operation

1. Turn Power on
2. Lamp to brighten image
3. Zoom in & out
4. Flip Image
5. Take Picture

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Precautions

- Investigating hidden mold problems may be difficult and will require caution when the investigation involves disturbing potential sites of mold growth.
- Safe work practices and personal protective equipment should be used if mold contamination is present that may be disturbed.

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Knowledge Check

Before you start your inspection, what tools will you need?





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Knowledge Check

- In your inspection, you find mold and moisture directly above the kitchen stove.
- The paint is peeling on the celling and the room feels humid.
- Wet readings show four locations where moisture is highest.

- **Knowing this, what do you do next?**

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Hands-on Demonstration

Measurement Equipment and Calibration:

- Moisture Meter - Record moisture content on 4 walls & describe building materials.
- Anemometer - Measure Ventilation Rate (CFM).
- Hygrometer - Determine Relative Humidity (RH%).

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NYCHA MOLD TRAINING

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Mold Root Causes

- The fundamental reason(s) for the occurrence of mold, water damage or moisture.
- Root cause(s) might often be not visible at first and require a comprehensive investigation to identify.
- Excessive moisture can be coming from multiple root causes.

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Mold Root Causes

NYCHA identified 29 root causes that are organized in 5 categories:

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

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

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.

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.

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

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Root Cause - Sealant Related

Sealant Related Issues – Issues that can be resolved by removing and replacing old caulking.

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Mold Root Causes – Sealant Related Issues

Example: Caulking missing around a bathtub:

Caulking - Is a material used to seal joints or seams against leakage in various structures and piping. Task for Maintenance and Plasterer.

Grouting - A dense fluid which is used to fill gaps or used as reinforcement in existing structures. Grout is generally a mixture of water, cement, and sand. Grout is thin so it flows readily into gaps. Task for Bricklayer.

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Mold Root Causes – Sealant Related Issues

- **Bathtub Shower Issues -** maintenance worker will follow-up on this work order.
- **Caulking DML** (Maintenance) - maintenance worker will follow-up on this work order and do the caulking.
- **Grouting DML** (Bricklayer) - bricklayer, craft, will follow-up on this work order and do the grouting.
- **Grouting DML** (Plasterer) - plasterer, craft, will follow-up on this work order and do the grouting.
- **Grouting/ Caulking DML** (Plasterer) - plasterer, craft, will follow-up on this work order and do the grouting / caulking work.
- **Grouting/ Caulking DML** (Bricklayer) - bricklayer, craft, will follow-up on this work order and do the grouting/ caulking.

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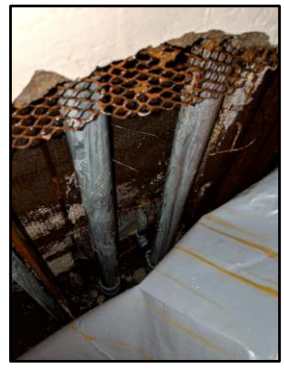
Root Cause - Leaks

Leak Issues - caused by a leak other than a sealant issue.



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Mold Root Causes – Leak Issues

Example: Crack in exterior (façade) is causing water enter to the unit.

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Mold Root Causes – Leak Issues

Issues caused by a leak other than a sealant issue:

- **Leak Around Window:** Lack of sealant around the window that causes water to penetrate.
- **Leak Through Façade:** A crack or damaged/missing mortar affecting the exterior wall.
- **Leak From Above/Beside - Investigate:** There is an active leak from a unit above or beside the unit with a mold condition.
- **Leak From Above - Previously Identified:** There was a leak that was abated but mold/ water damage remain present.
- **Plumbing Leak - In Unit**: A pipe leaking within the wall cavity requiring a wall break.

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Mold Root Causes – Leak Issues

Leak From Above - Previously Identified

- Pre - inspection to look-up leak history for the specific unit.
- Does not cancel or duplicate previous generated tickets.
- Escalates the matter if root cause is being caused by something else if it keeps reoccurring.*

NOTE: Previously Identified should be selected when the root cause or remediation work for the mold, water damage, or wet condition had been identified or abated by Property Maintenance staff or Skilled Trades on a prior work order.

*Reoccurrences are signs that the root cause has not been found.

A note and pictures are required for this root cause.

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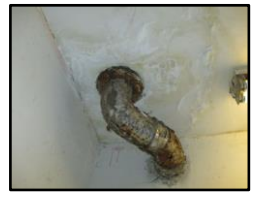
Mold Root Causes – Leak Issues

- **Roof Leak Non - Capital**
  Roof replacement or repair is required.
- **Sink Supply Line Leak**
  Caused by a leak(s) in the supply line.
- **Sink Waste Line Leak**
  Caused by a leak(s) in the waste line.
- **Toilet Leak**
  Active leak coming from the toilet.



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Mold Root Causes – Resident

Resident - Caused - Issues that can be prevented with resident education and behavior changes.

Select this ONLY when there is proof that the resident's direct behavior is the cause.

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Mold Root Causes – Resident

Issues that can be prevented due to adjustments to resident education and behavior.

Examples:

- Not opening the window for ventilation during, or after, showering.
- Covering the roof fan vent.
- Improper installation of a dishwasher or washing machine.
- Improper installation of a clothing dryer in the apartment.

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Mold Root Causes – Resident

- Resident - Caused (Code 1)
  Resident doesn't open the window or door after taking a shower
- Resident - Caused (Code 2)
  Dishwasher was installed improperly.
- Resident - Caused(Code 3)
  Washing machine was installed improperly.
- Resident - Caused (Code 4)
  Vent is blocked or covered.

- Resident - Caused (Code 5)
  Clothing dryer was installed improperly.
- Resident - Caused (Code 6)
  Other – the option was not listed.

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Mold Root Causes – Resident

Resident - Caused by Other Actions (Code 6)

- Mold Busters education will be needed for the resident(s) for future prevention of mold. A mandatory inspection will be needed to find the exact reason(s).

A picture and an explanation is needed for the reader to understand the reasoning for selecting this root cause.

Examples:

- Excessive boiling of pots.
- Unbalanced hot/cold temperatures in the unit and/or units above, below, or adjunct.

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Root Cause – Ventilation

Ventilation – Issues that are a result of inoperable roof fans and/or lateral duct issues.

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Mold Root Causes - 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.

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Mold Root Causes - Ventilation

- **Roof Fan Out Of Order**
  Roof Fan(s) is not circulating air.
- **Vent Clogged/ Covered**
  Exhaust grill and/or lateral ductwork is clogged with dust or obstructed.
- **Window Inoperable**
  Lack of ventilation due to the window's inability to open.

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Ventilation Program Progress

- Roof fan installation complete with **8,436 fans** installed
- *Roof Fan Standard Procedure* (SP 050:21:1) published on: 7/30/21
- **73,805** vents have been cleaned.
- **40 CFM** increase on average as a result of the clean vents initiative.
- Fire damper replacement project in the works.

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Mold Root Causes – Other

- Issue(s) caused due to reasons outside of the 4 categories previously listed.
- Select this option if the root cause is not listed or not evident through the standard assessment practices.

A note and pictures are required for this root cause.

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Mold Root Causes – Other

- **Toilet Bowl/ Tank Needs Barrier** - Toilet tank is in direct contact with the surface of the wall, allowing condensation to transfer across surfaces.
- **Tub Surround DML** - Water is penetrating through missing or damaged areas of the tub surround.
- **Perimeter Surface Condensation** - Mold or water damage is caused by warm air in the apartment coming into contact with relatively colder building surfaces.
- **Bathtub Shower Issues** - Bathtub is missing, faucet is leaking, faucet is running, and/or faucet is dripping.
- **Pipe Insulation DML** - Damaged or missing pipe insulation resulting in condensation (or sweating) on pipe surfaces. A wall - break is required to diagnose this problem.
- **Other** - This option should be selected if the root cause is not listed or not evident through the standard assessment practices.

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Bathtub Shower Issues Condensation

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Condensation – Uninsulated Pipes

Missing insulation on cold water riser

Damaged insulation on cold water riser

Missing insulation on cold water supply

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Condensation – Water Lines

- Can occur when warm moist interior air contacts cooler surfaces such as cold - water pipes.
- Toilet tanks containing cold water often cause condensation.
- Hot showers can cause condensation on warm surfaces.

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Mold Root Causes - Other

Example:

- The root cause is not listed and/or not evident through the standard assessment practices.

A note and pictures are required for this root cause.

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Perimeter Surface Condensation

- Can occur when warm moist interior air contacts cooler surfaces such as windows.
- Condensation forms when the surface temperature is below the dew point temperature for the interior air.

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Name that Root Cause!

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Identifying the Probable Root Causes and 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.
- Failure class details WHAT the problem is.
- Problem code describes HOW the problem occurred.

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Identifying the Probable Root Causes and Remediation Methods

- Selects the ceiling, wall(s), floor, or component(s) that have the same probable root cause (e.g., both the mold on the ceiling and water damage on the wall have a probable root cause of shower moisture).
- Indicates if a wall break is required to inspect or correct the probable root cause.
  - 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.

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Identifying the Probable Root Causes and Remediation Methods

If the inspector is unable to determine the probable root cause of a mold, water damage, or moisture (e.g. wet measurement) condition they must:

- First request trouble shooting assistance from the other inspectors at the development; and then
- Escalate the work order to the Property Management Department skilled trades deputy director if the probable root cause still cannot be determined.

The skilled trades deputy director assigns appropriate staff to assist the inspector.

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Name that Root Cause!

Toilet Bowl/Tank Needs Barrier

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Name that Root Cause!

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Name that Root Cause!

Roof Leak

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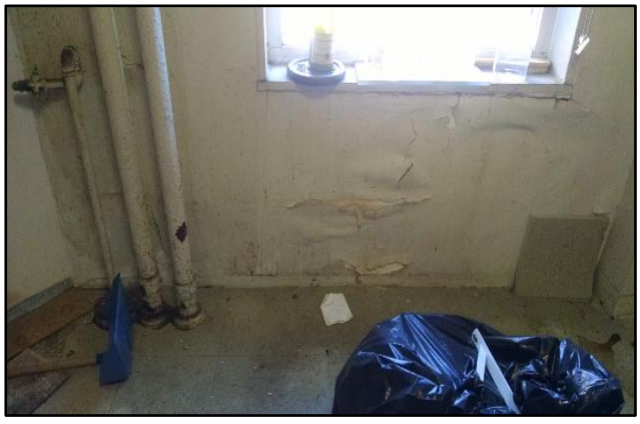
Name that Root Cause!



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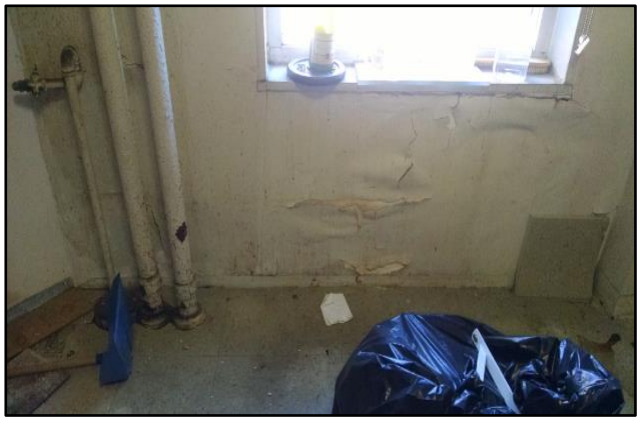
Name that Root Cause!



Leak Through Façade

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Name that Root Cause!

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Name that Root Cause!

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Knowledge check

An inspector finds mold and excessive moisture in the kitchen cabinets under the sink. There was a past moisture issue located and fixed.

What the root cause?

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Knowledge check

An inspector finds mold and excessive moisture in the kitchen cabinet under the sink where a past issue was located. Which general category best fits?

1. Sealant Related Issues
- Caulking DML (Maintenance)
- Grouting DML (Bricklayer)
- Grouting DML (Plasterer)
- Grouting/ Caulking DML (Plasterer)
- Grouting/ Caulking DML (Bricklayer)

4. Ventilation
- Roof Fan Out Of Order
- Vent Clogged/ Covered
- Window Inoperable

2. Leak Issues
- Leak Around Window
- Leak Through Façade
- Leak From Above/Beside - Investigate
- Plumbing Leak - In Unit
- Roof Leak - Non Capital
- Sink Supply Line Leak
- Sink Waste Line Leak
- Toilet Leak
- Leak From Above - Previously Identified *

3.Resident-Caused
- Resident-Caused (Code 1)
- Resident-Caused (Code 2)
- Resident-Caused (Code 3)
- Resident-Caused (Code 4)
- Resident-Caused (Code 5)
- Resident-Caused (Code 6)

5. Other
- Toilet Bowl/ Tank Needs Barrier
- Tub Surround DML
- Perimeter Surface Condensation
- Bathtub Shower Issues
- Pipe Insulation DML
- Other

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Knowledge check

In your inspection, you find mold and moisture directly on the ceiling. Which of the five categories best fit this problem?

1. Sealant Related Issues
- Caulking DML (Maintenance)
- Grouting DML (Bricklayer)
- Grouting DML (Plasterer)
- Grouting/ Caulking DML (Plasterer)
- Grouting/ Caulking DML (Bricklayer)

2. Leak Issues
- Leak Around Window
- Leak Through Façade
- Leak From Above/Beside - Investigate
- Plumbing Leak - In Unit
- Roof Leak - Non Capital
- Sink Supply Line Leak
- Sink Waste Line Leak
- Toilet Leak
- Leak From Above - Previously Identified*

3.Resident-Caused
- Resident-Caused (Code 1)
- Resident-Caused (Code 2)
- Resident-Caused (Code 3)
- Resident-Caused (Code 4)
- Resident-Caused (Code 5)
- Resident-Caused (Code 6)

4. Ventilation
- Roof Fan Out Of Order
- Vent Clogged/ Covered
- Window Inoperable

5. Other
- Toilet Bowl/ Tank Needs Barrier
- Tub Surround DML
- Perimeter Surface Condensation
- Bathtub Shower Issues
- Pipe Insulation DML
- Other

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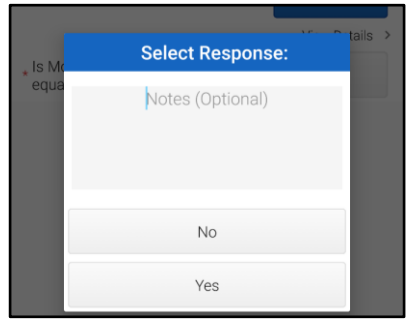
Take Notes

Handheld App (IWM) has space for notes
- Information from the resident.
- Observations that support your decisions.
- Provides details for root cause repair and remediation.
- Demonstrates you did a thorough job.



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Take Notes

Which example is the “perfect” note?

Note 1:
“Leak was fixed before.“

Note 2:
“Resident reported a previously identified leak from above in bathroom of upstairs apartment, which property management completed repairs ~90 days ago. Maximo shows WO's 68758747 (repair cracked pipe – CLOSE), 68758763 (plaster wall - scheduled) and 68758747 (paint wall - WTSCH) corresponding to the leak from above.”

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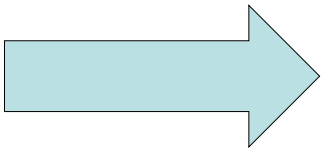
Notes Requirement

Which example is the “perfect” note?

Note 1:
Leak was fixed before.



Note 2:

Resident reported a previously identified leak from above in bathroom of upstairs apartment, which property management completed repairs ~90 days ago. Maximo shows WO's 68758747 (repair cracked pipe – CLOSE), 68758763 (plaster wall – scheduled) and 68758747 (paint wall - WTSCH) corresponding to the leak from above.

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Notes Requirement

The perfect note includes:

1. Location: Where the previous or current leak was found.
   Example: Bathroom upstairs unit**.**
2. Repairs: Description of completed repairs.
   Example: Cracked pipe.
3. Date: Of when leak was found AND repairs were completed.
   Example: 90 days ago.
4. Follow Up Work: Explain what remediation work still needs to be done.
   Example: Plaster wall and paint wall.

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Day 2 – Mold Inspector

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Virtual Reality Simulation

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Virtual Reality Simulation

- Headset is placed over your head.
- Volume & power control are in front on top.

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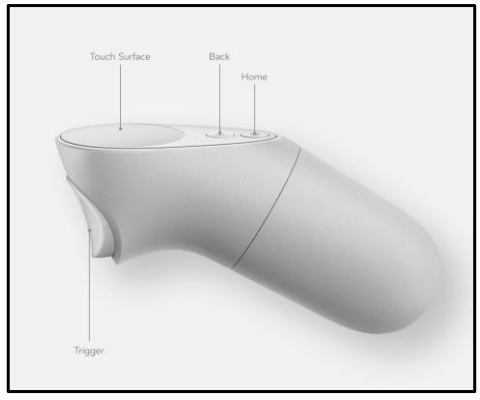
VR Simulation Controls

- Trigger used for selecting items
- Home (Oculus) for reopening.
- Avoid other buttons.



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VR Simulation Controls

- Look at the item.
- Pull the trigger to select.
- Avoid other buttons.

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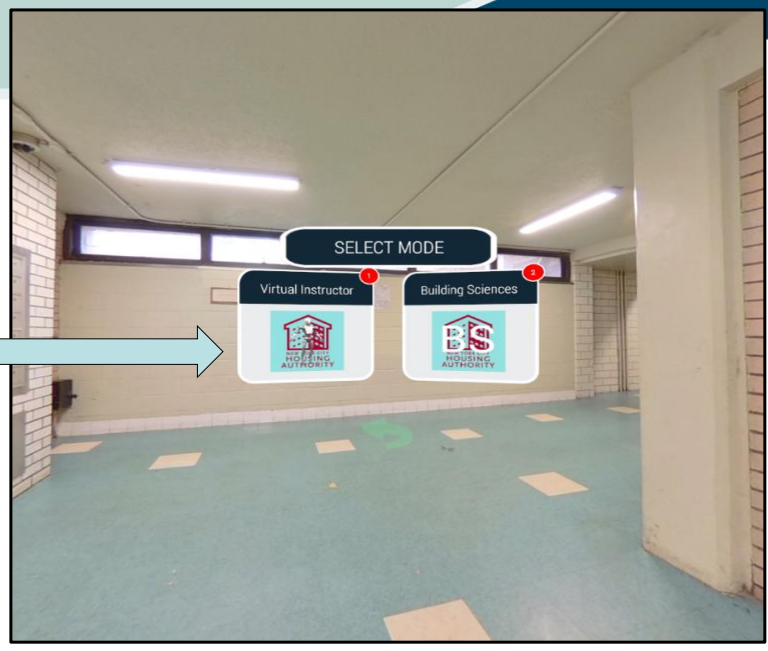
VR Simulation

Screen 5
- Select Virtual Instructor.
- Pull the trigger.
- Select Virtual Instructor.
- Then complete Inspections 1 and 2.



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NYCHA MOLD TRAINING

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NYCHA MOLD TRAINING

Welcome to the Handheld Informer Work Management (iWM)

Training Course for Mold Inspection

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IWM

Informer Work Management

- App designed by and for NYCHA.
- Critical for recording results of inspection.
- Used to determine remediation work orders.
- Integrated into Maximo.

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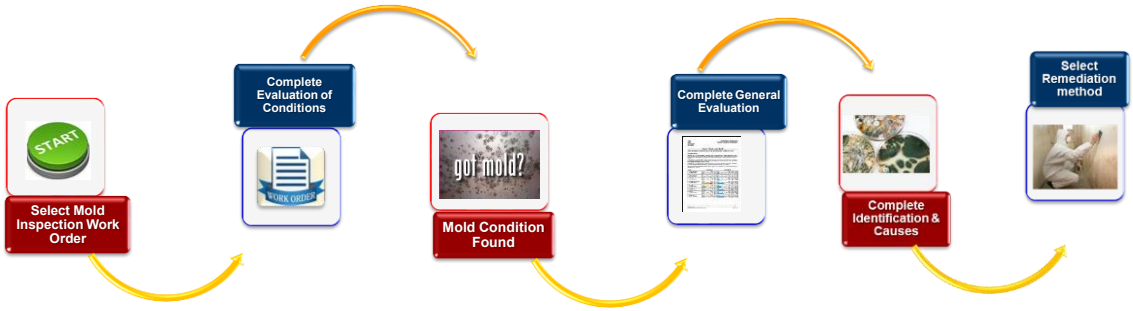
Mold Work Order Workflow

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



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Mold Work Order Workflow

Doing the work…

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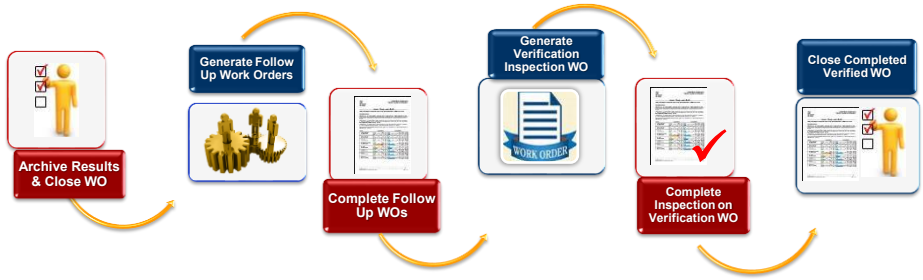
Mold Work Order Workflow

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



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Mold Work Order Workflow

Ending the work…

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Mold Work Order Workflow

NO Mold was Found…

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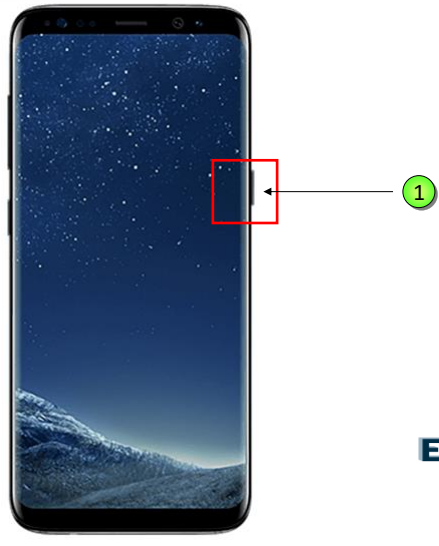
Logging into the Handheld

1. Press Power/Lock Button
2. Swipe across screen
3. Enter the default password for the **Device**:

nycha123



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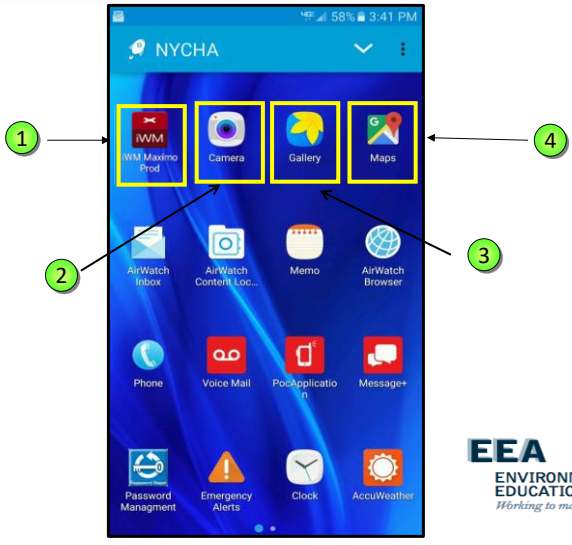
Display Settings

	Term	Definition
1	**iWM Maximo Prod**	**Informer Work Management** can be used to search for, work on and close work orders**.**
2	**Camera**	User friendly, point and shoot. Pictures taken are saved in the Gallery application.
3	**Gallery**	A place holder for all pictures taken. Can sort pictures by albums. Can easily search, upload and delete pictures.
4	**Maps**	Google maps is a reliable mapping service providing location information.



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Launch the iWM Application

1. Tap on the **Work Management** Application to access the log in screen.

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Log In To iWM Application

1. Enter **User Name** and **Password**
2. Tap **LOGIN**

Use the same user name and password you use for Maximo and logging into your work computer.

NOTE: Make sure you are in an area that has good cell service.

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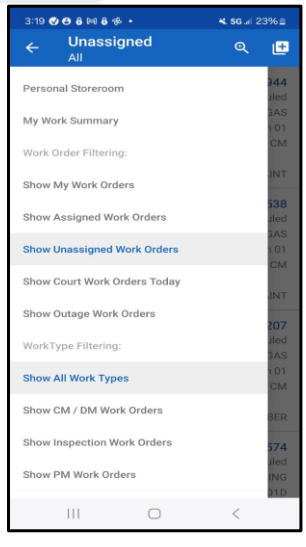
Search Menu

Show My Work Orders: Shows open WOs assigned to the user who is logged-in.

Show Assigned Work Orders: Shows open WOs that are assigned to other users in the user's area (Development or Borough).

Show Unassigned Work Orders: Shows open WOs that are not assigned to any person.

Show Court Work Orders Today: Shows open WOs where resident has an appointment today.



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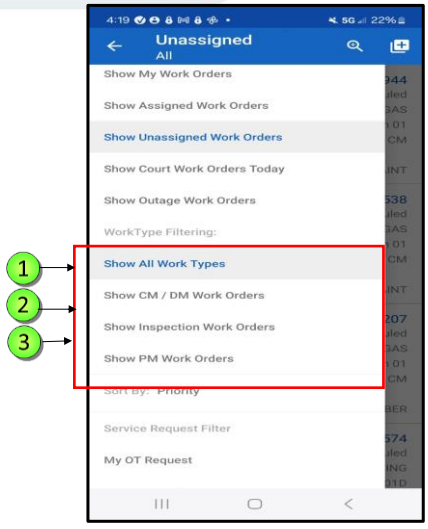
Viewing Work Orders - Types

Work orders can be filtered and sorted by work order type, there is no default.

1. **Show All Work Types** displays all open Work Orders for the Development.
2. **Show CM / DM Work Orders** displays all **Corrective Maintenance** and **Deferred Maintenance** Work Orders.
3. **Show Inspection Work Orders** displays all the **Inspection** Work Orders.



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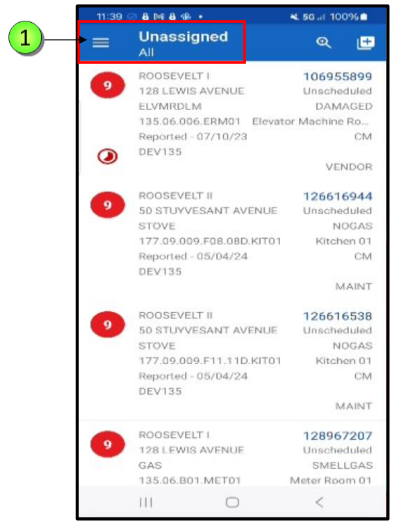
Viewing Work Orders

All visible WOs will be in the user's area/location (**Borough/ Managed By**).

1. Tap the **Menu** Button to go to the **Menu** in order to sort the list of **Unassigned Work Orders** in a different way.



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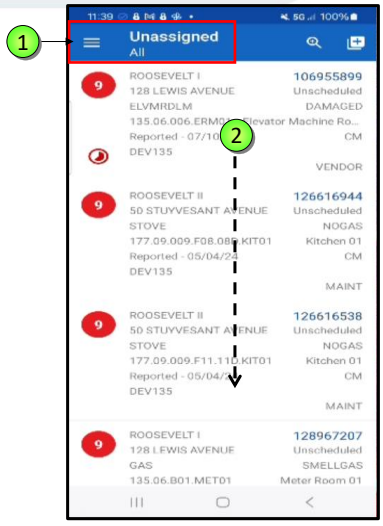
Viewing Work Orders

Tap **Show My Work Orders** option to go to the list of assigned Work Orders.

1. Tap on the **Menu** or **Go To** button to go back to the **Menu** screen.
2. To **Refresh** your screen manually slide your finger **down** the screen.



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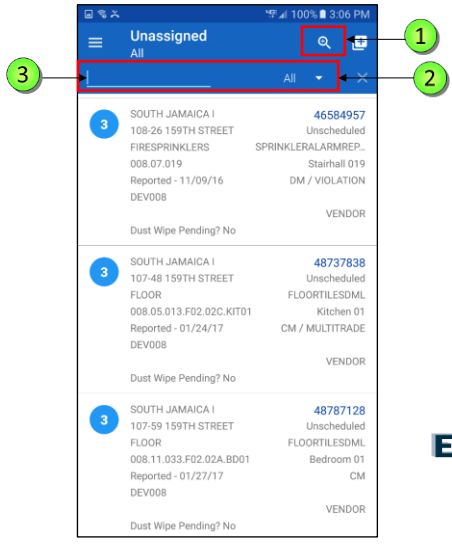
How To Search For Work Orders

1. You can search for work orders by tapping on the small **magnifying glass** .
2. The default search criteria is **ALL.** You can use the keyboard and type a work order number to search for.
3. Use the keyboard and start typing the **first few numbers** of a work order and the system displays all the work orders that start or begin with these numbers.



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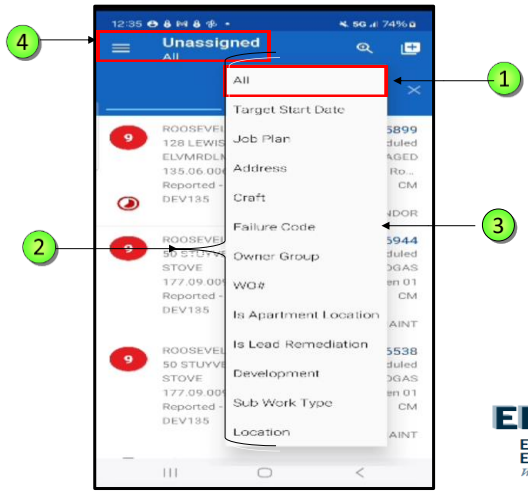
How To Search For Work Orders

1. To search for more criteria, tap on the **down arrow** and a list displays with all available search options.
2. You can search by **All**, **Work Order Number, Failure Code, Craft, Sub Work Type, Location, Owner Group, Development, and Address.** Select the search option you wish to explore and type a new search criteria.
3. Tap on **Failure Code** and use the keyboard and start typing for this example, **door**.
4. The system displays all the WOs with this criteria.



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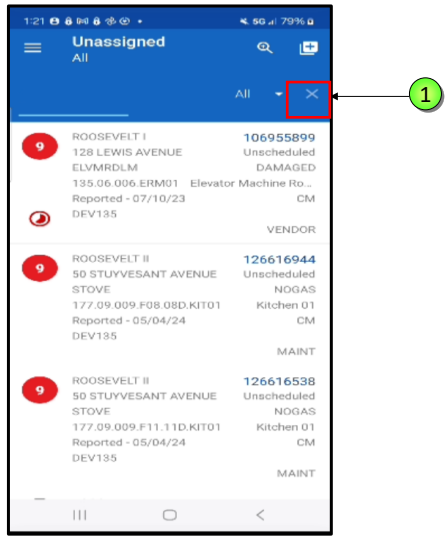
Viewing Work Orders

1. Tap on the **X** to collapse any search options you do not want.



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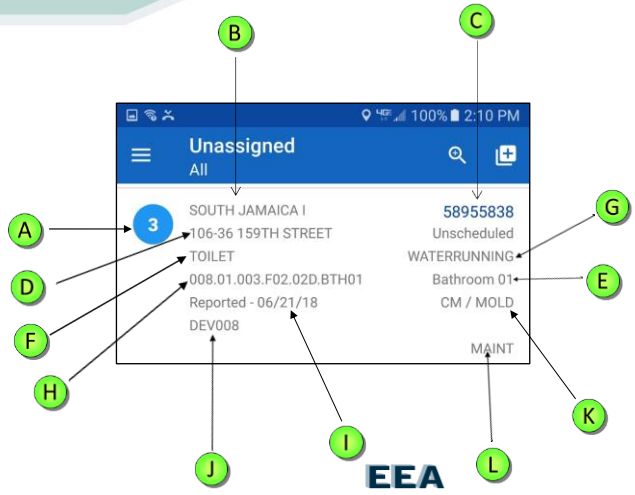
View Work Order Details

The WO list screen shows a detailed summary about each WO.

- A **Priority**
- B **Development**
- C **WO Number**
- D **Address**
- E **Room/Location**
- F **Failure Class**
- G **Problem Code**
- H **Location String**
- I **Reported By Date**
- J **Owner Group**
- K **WO Type**
- L **Craft**



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NYCHA Locations Explained

Examples of NYCHA Locations:

- Developments
- Buildings
- Stair Halls
- Floors
- Apartments
- Rooms (bedroom, bathroom, etc.)
- Heating Plumbing Line
- Grounds
- Elevators
- Community Centers

005.01.001.F02.02C.KIT01

Development #/ Building / Stair Hall / Floor / Apartment / Room

005. 01. 001. F02. 02C. KIT01

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Viewing Related Work Orders

1. **Related work order** - An open work order for the same apartment and non-apartment locations display.

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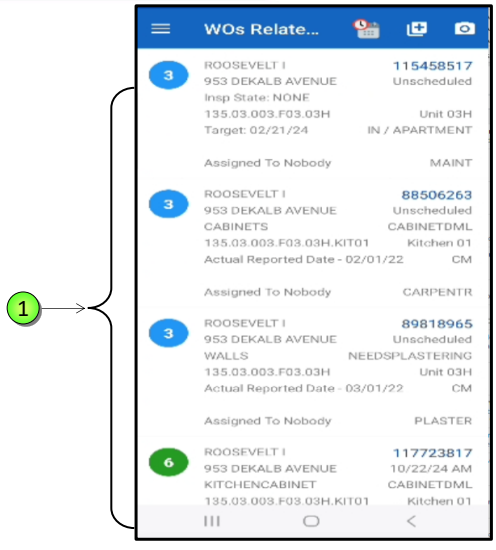
Viewing Related Work Orders

1. After viewing the **Related Work Order** listing, tap the device **back arrow** ⮌ he **Work Order Details** screen redisplay.



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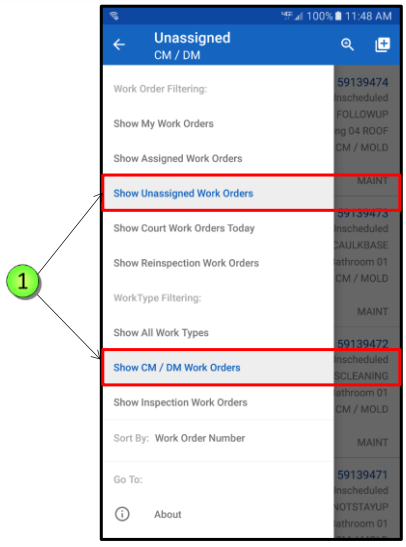
Mold Work Orders Process - Inspection

1

The first parent work order appears in:

- **Show Unassigned Work Orders**
- **Show CM /DM Work Orders**

NOTE: If the work order is assigned to a worker it will appear in **Show Assigned Work Orders** or **Show My Work Orders**.



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Mold Work Orders Process - QA

1

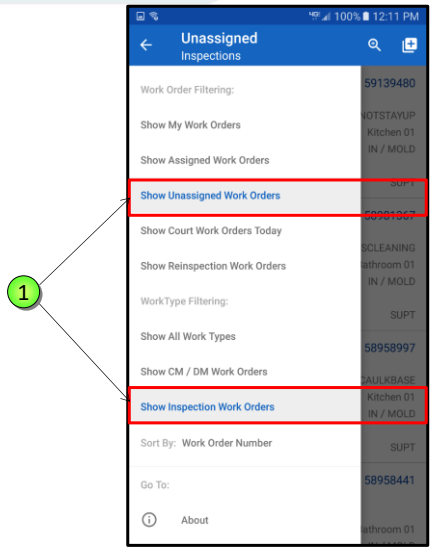
The first QA work order appears in:

- **Show Unassigned Work Orders**
- **Show Inspection Work Orders**

NOTE: The QA work order is automatically generated in **Maximo 25-days**, and the new **Target Start Date** will be set to **30 days** after the last child work order is closed (or **25-days** after the mold inspection gets closed if no children are created).

The **Target Finish Date** is set to **15 days** after the **Target Start Date**.

If either **Target Start Date** or **Target Finish Date** fall on a weekend or a holiday, then **<u>next business day</u>**.



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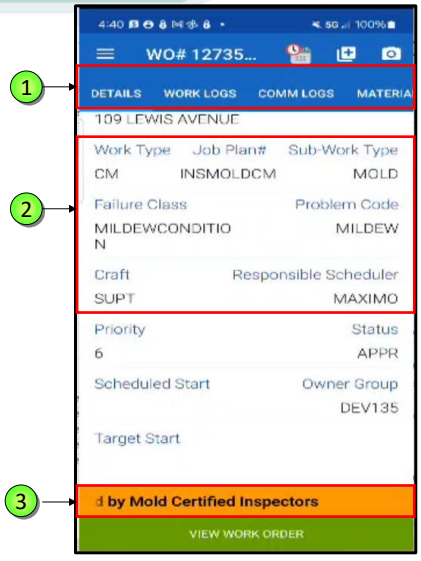
View Work Order Details

1. The user can review the **Work Order Details** by scrolling up and down on the **Details** tab.

2. The fields below are unique for the **Mold Inspection** Work Order:

   Work Type = **CM**
   Job Plan# = **INSMOLDCM**
   Sub-work Type = **MOLD**
   Failure Class = **MILDEWCONDITION**
   Problem Code = **MILDEW**

3. Only inspectors who **completed the Mold Inspection** course will be allowed to start Mold Inspection work order



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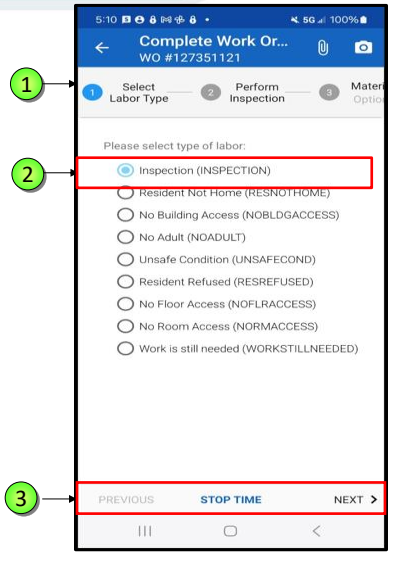
View and Select Labor – Start the Timer

1. After reviewing the **Work Order Details** the user is now ready to begin the work. **START TIME** is displayed at the bottom of the screen.

2. Tap on **START TIME**

   Select **Inspection**

3. Tap **NEXT**



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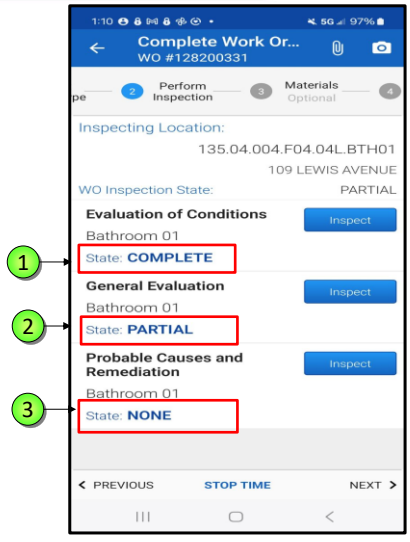
Inspection Status

On **Perform Inspection** screen you can see the **WO Inspection State.** This is the current **State** of the Inspection.

1. **COMPLETE** – All required results have been entered.
2. **PARTIAL** – Some results have been entered, but not **All** required results.
3. **NONE** – No results have been entered.
4. **NOTE: WO Inspection State** of the whole WO will appear on this screen and on the **Work Order List** screen.



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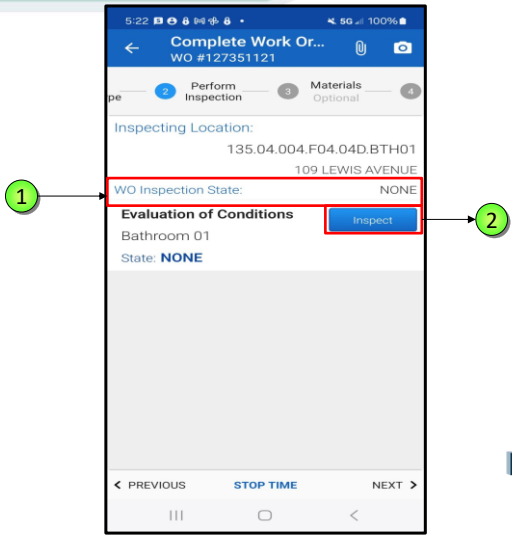
Perform Inspection

The first task in a series of tasks is:

1. **Task 1: Evaluation of Conditions**

   The **WO Inspection State** is **NONE.**

2. Tap **INSPECT**



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Step 1 - Evaluation of Mold Growth

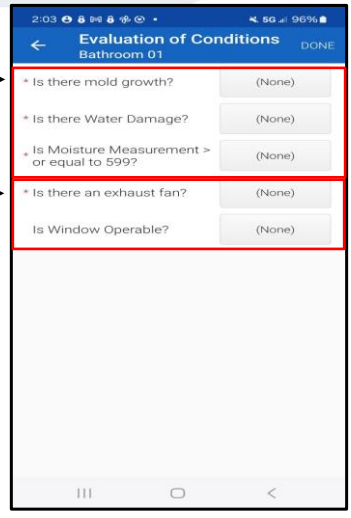
Items that must be inspected are marked by red asterisks **(*)**

All questions with an asterisk **(*)** are mandatory.

1 **Evaluation of Conditions** screen requires evaluation for:

- **Mold Growth (Yes/No)**
- **Water Damaged (Yes/No)**
- **Moisture Measurement >= 599 (Yes/No)**

2
- **For bathroom or kitchen locations additional questions appear and one of the required to be answered for ventilation:**
  - **Is there an exhaust fan?**
  - **Is window operable?**



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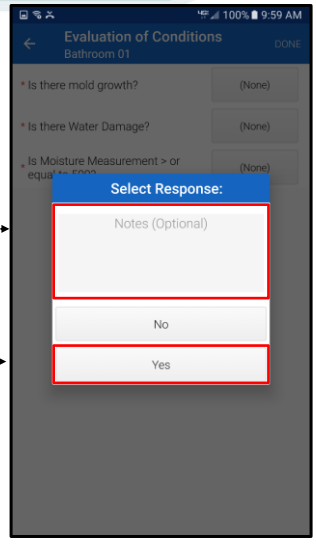
Evaluation of Mold Growth – (Continued)

The **Select Response** window displays 3 options:

- **Notes** (optional)
- **No**
- **Yes**

1 In the **Notes** field, the user can input text.

2 Tap **Yes.**



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Evaluation of Mold Growth – (Continued)

1. The **Select Areas Affected** screen displays, all of the fields or areas to select.

   To select an affected area tap on it, **iWM** then highlights the selected area in **green**.

   To unselect an area tap on it again and the **green** bar disappears.

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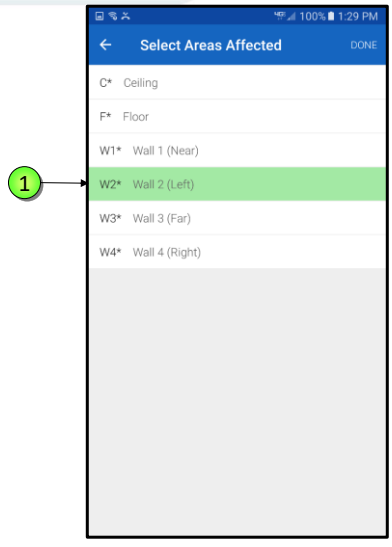
Evaluation of Mold Growth – (Continued)

1. Tap on **W2* Wall 2 (left)**, the system highlights it in green.

   Tap **DONE.**



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Evaluation of Mold Growth – (Continued)

1. Tap inside the field and the device keyboard displays.
1. Type **25.**
1. Tap **DONE** on the device keyboard.
1. Tap **DONE.**

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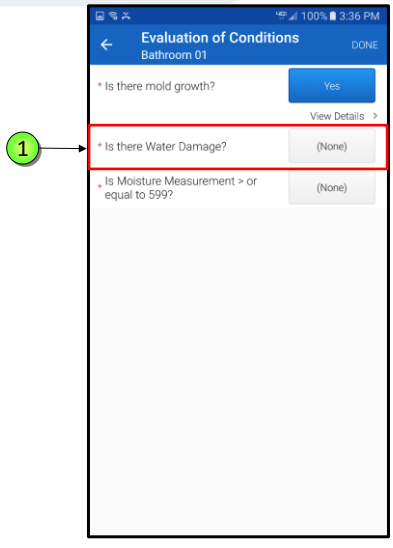
Evaluation of Mold Growth – (Continued)

1. The second mandatory question on the **Evaluation of Conditions** screen is:
   Is there Water Damage?
1. Tap **None.**



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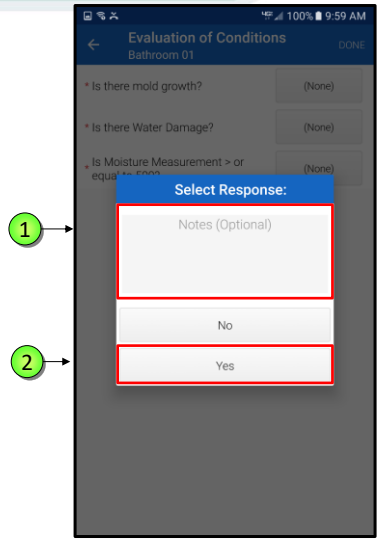
Evaluation of Water Damage

The **Select Response** window displays 3 options:

- **Notes** (optional)
- **No**
- **Yes**

1. In the **Notes** field, the user can input text.
2. Tap **Yes**.



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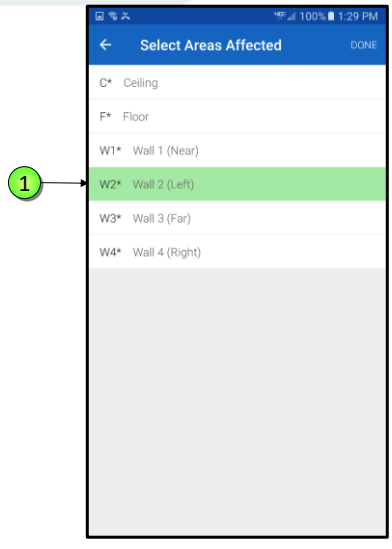
Evaluation of Water Damage

1. Tap on **W2* Wall 2 (left)**, the system highlights it in Green.

Tap **DONE.**



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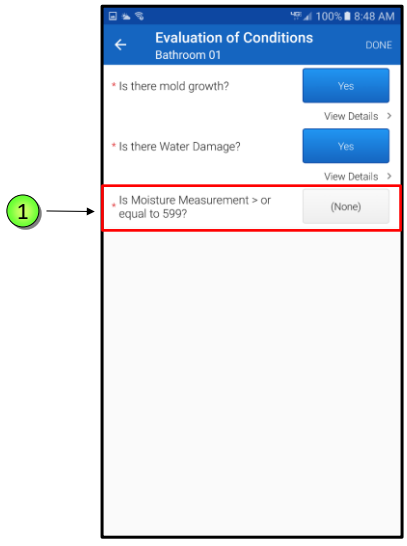
Moisture Measurement

1

The last question on the **Evaluation of Conditions** is to evaluate the moisture level.

Evaluate the moisture measurement level (greater than) >= 599.

Tap **NONE.**



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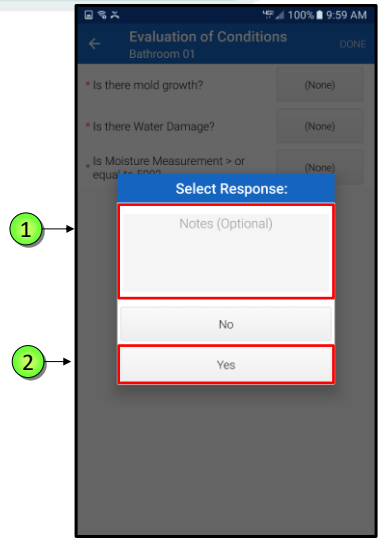
Moisture Measurement

The **Select Response** window displays 3 options:

- **Notes** (optional)
- **No**
- **Yes**

1 In the **Notes** field, the user can input text.

2 Tap **YES.**



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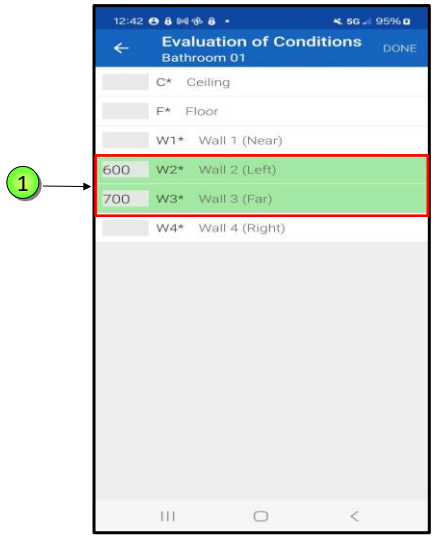
Moisture Measurement

1

Input measurements for every surface area where moisture is measured.

Enter measurements for **Wall 2 and Wall 3.**

Tap **NONE.**



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Evaluation of Conditions

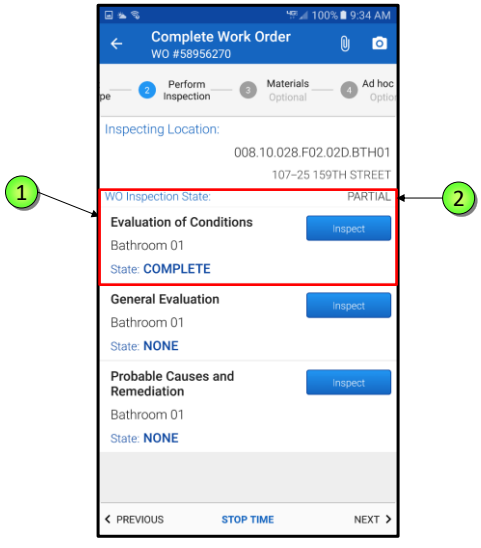
1
2

The **Evaluation of Conditions** status is now **COMPLETE,** and the **WO Inspection State** is **PARTIAL**.

NOTE: If the **Evaluation of Conditions (Task 1)** has all the answers as **NO** for **Mold Growth**, **Water Damage** and **Wet Reading** questions, then **do not** answer the rest of the inspection questions.

Inspection is complete.

The inspector can then take a **photo** and **submit** the inspection results to **Maximo**.



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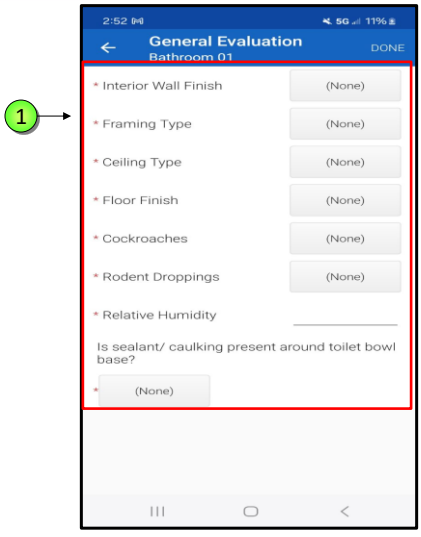
Step 2 - General Evaluation

1

Items that must be inspected are marked by a red asterisk **(*)**.

All questions with an asterisk **(*)** are **mandatory**.

Tap **NONE,** next to **Interior Wall Finish**.



1

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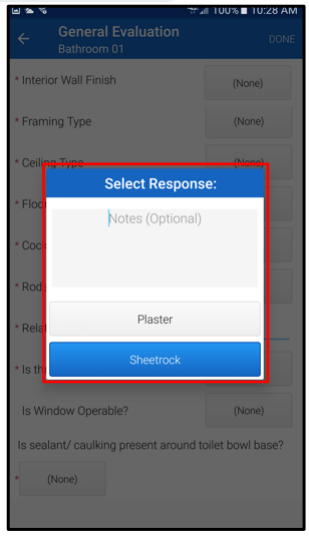
General Evaluation

1

Items that must be inspected are marked by a red asterisks **(*)**.

All questions with asterisks **(*)** are **mandatory**.

Tap **NONE,** next to **Interior Wall Finish**.



1

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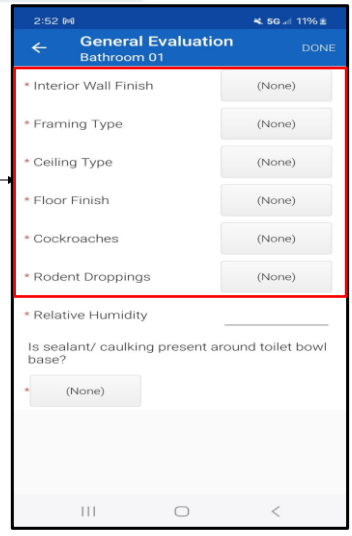
General Evaluation

The process is the same for the following items:

1

- **Framing Type**: **Steel** or **Wood**
- **Ceiling Type**: **Concrete** or **Sheetrock**
- **Floor Type**: **Ceramic**, **Vinyl** or **Wood**
- **Cockroaches: No** or **Yes**
- **Rodent Droppings: No** or **Yes**

Tap **NONE** next to **Framing Type**



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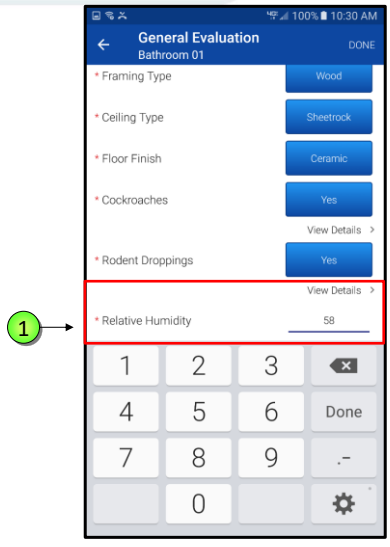
General Evaluation

The inspector shall input the **Relative Humidity** of the room. Upon tapping on the **Relative Humidity** field, the device keyboard appears.

1

Type **58.**

Tap **DONE** on the device to remove the keyboard.



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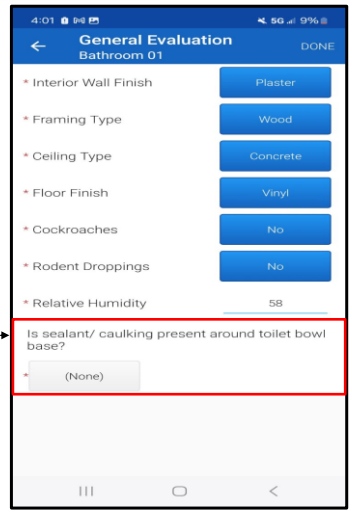
General Evaluation

1. If the location is a bathroom, the inspector must answer the question, "**Is sealant/caulking present around toilet bowl base?**" as **YES** or **NO.**

   Tap **NONE** and select **NO** from the **Select Response** window.

   NOTE: Maximo will auto-generate a Work Order, if the answer is **NO**, to fix the **caulking/sealant** with mold resistant caulking, upon submission of the inspection results.

   Tap **DONE**



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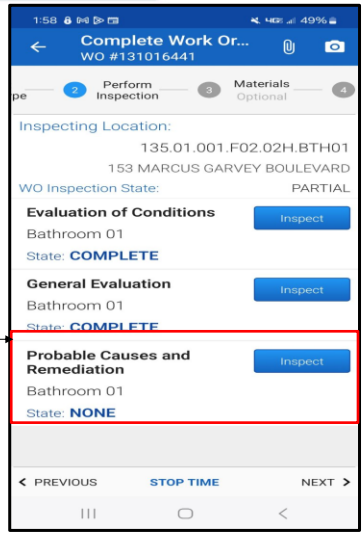
Step 3 - Probable Causes and Remediation

1. The third task in a series of tasks is

   Task 3: Probable Causes and Remediation

   Tap **INSPECT**



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Probable Causes and Remediation

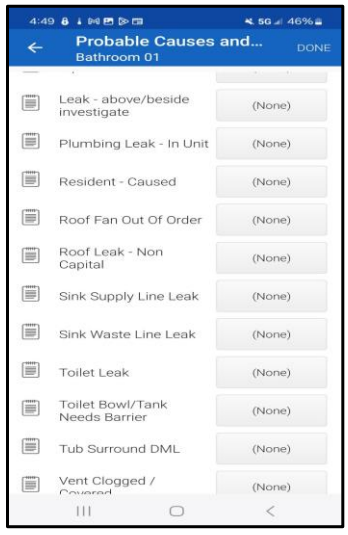
On the top of the screen, **iWM** is reminding the user to select a **Probable Cause and Remediation method** for the **Walls 1**, **Walls 2**, and the **Floor**.

Those were the **Affected Areas** selected in **Task 1: Evaluation of Conditions**.

IWM restricts user to select up to 4 probable causes

Selecting **Remediation** for all these walls is **mandatory**.

The wall-break question is mandatory.



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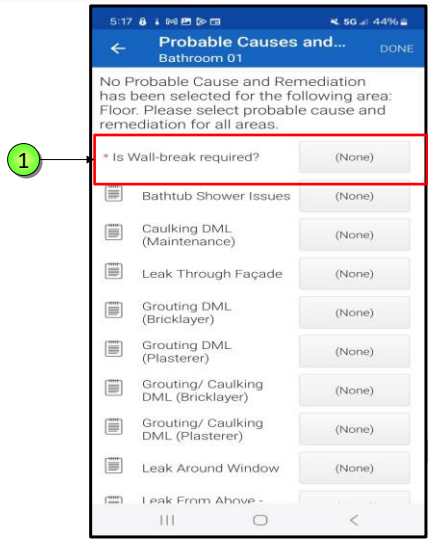
Probable Causes and Remediation

The wall-break question is the only m**andatory** one on the screen.

You must select **<u>at least</u> ONE** other **Probable Cause** on the **Probable Causes And Remediation** screen (up to 4).

The inspector will answer **YES** for whichever causes are applicable. **<u>Only select what is needed</u>**.

Tap **NONE** next to the **wall-break** question.



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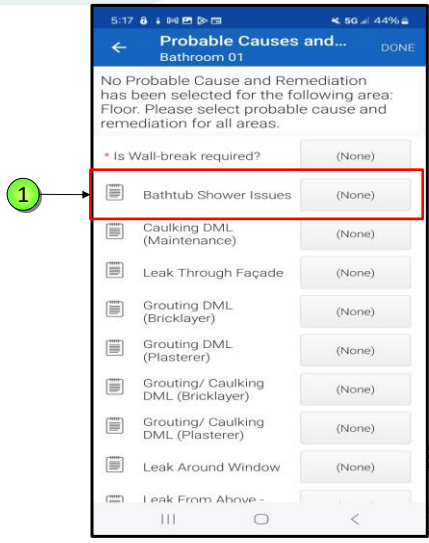
Probable Causes and Remediation

If the inspector answered **YES** for the **Probable Root Cause**, select the **Areas Affected** by the specific cause.

NOTE: Only **"Areas Affected"** that were selected from **Task 1** will show in list. And **EACH** surface **Area Selected** from **Task 1** must be accounted for against a **Probable Cause**.

Multiple surface areas can be selected per **Probable Cause**.

Tap **NONE** next to **Bathtub/ Shower Issues.**



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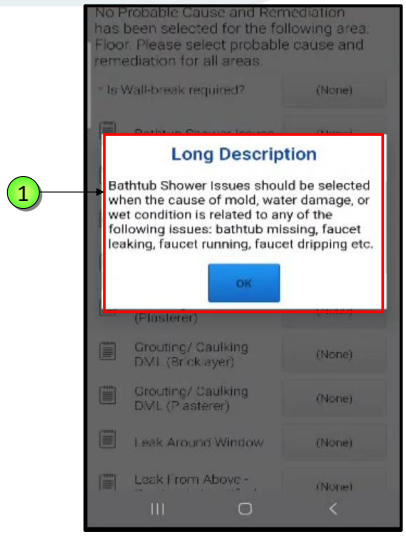
Probable Causes and Remediation

1 Inspector can get further detail on each root cause by tapping notepad .



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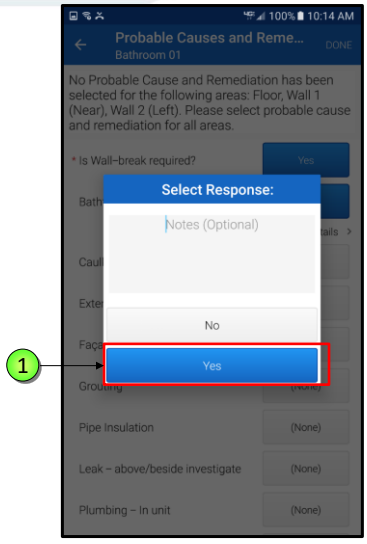
Probable Causes and Remediation

1. The **Select Response** window appears, the available answers are **YES** or **NO**.

   Tap **YES.**



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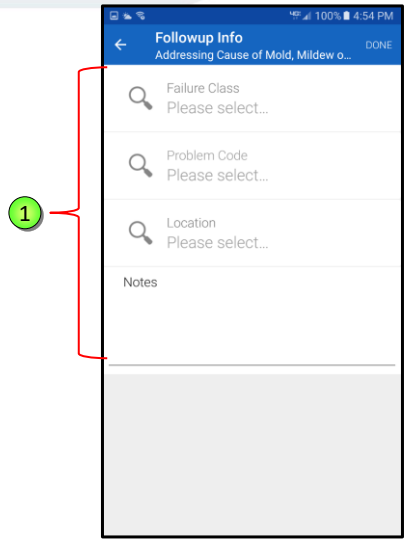
Probable Causes and Remediation

1. The **Followup Info** screen displays, with 4 fields:

   - **Failure Class**
   - **Problem Code**
   - **Location**
   - **Notes (Optional)**

   Tap **Failure Class.**



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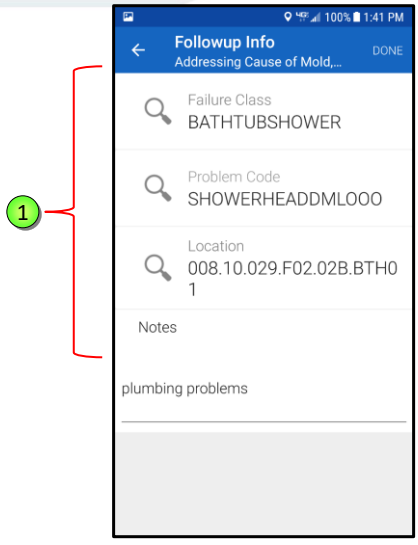
Probable Causes and Remediation

1. Review the completed **Followup Info** screen, with all the selected fields populated.

   Tap **DONE.**



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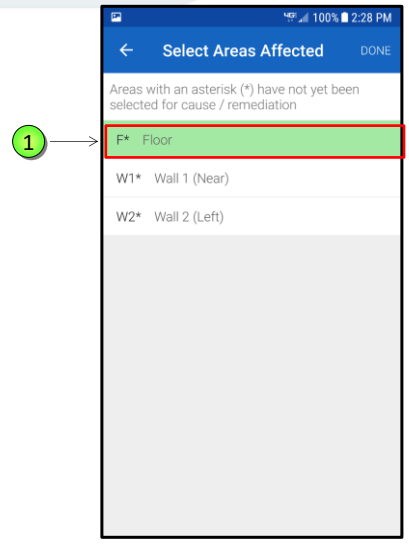
Probable Causes and Remediation

Select the **areas affected** by the **root cause repair**, one area at a time.

Tap **F* Floor.**

Once selected, **iWM** will highlight it in **green**.

Tap **DONE.**



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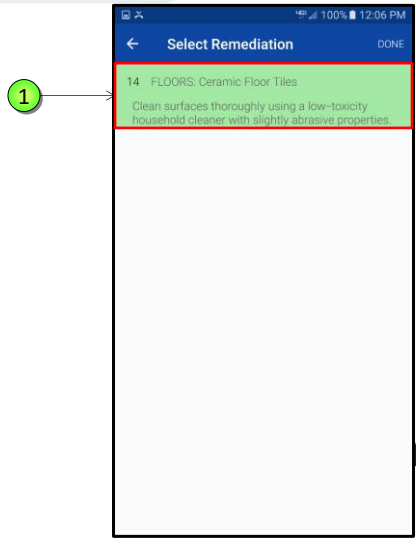
Probable Causes and Remediation

1. The **Select Remediation** screen appears. Select the **remediation method** from the displayed list. Tap on **Number 14, Floors.** Once selected, **iWM** will highlight the selection in **green**.

   Notice the **reference number** associated with the remedy as this what will display in the **View Details**.

   Tap **DONE**



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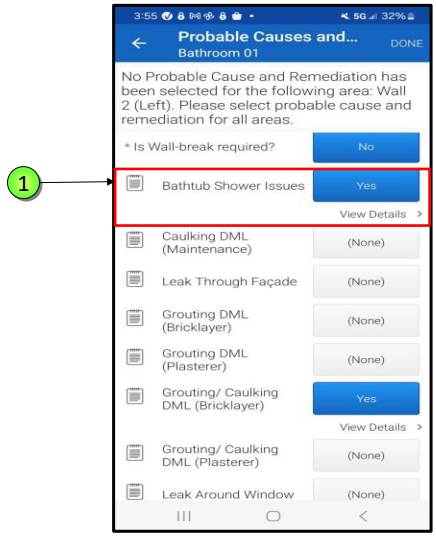
Probable Causes and Remediation

1. Tap on **View Details** below the **Bathtub/Shower** field to review information entered.



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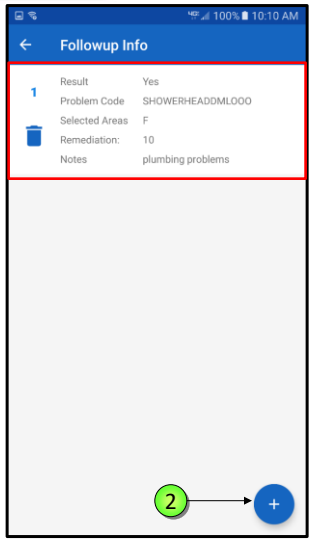
Probable Causes and Remediation

1. Notice the corresponding number is replacing the **Remediation** method that was selected. In this case, the number is **10**.

2. Tap the **plus sign** (+), to add more **root cause repairs** pertaining to the same wall.

   Then follow the same process as before.



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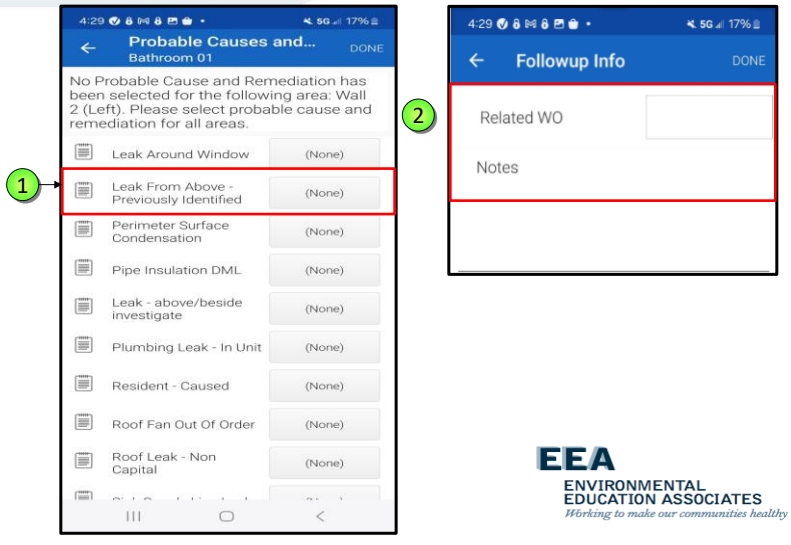
Note: Leak From Above - Previously Identified

1. **Leak From Above - Previously Identified** will require the inspector to enter a related work order that is linked to this probable cause.

   Prior to the mold inspection, the inspector should look-up the unit history, particularly leak work orders, and ensure that the mold work order does not cancel or duplicate previously generated tickets.

   Escalate if the root cause is caused by a reoccurring issues.

   A note and picture(s) are required for this root cause.



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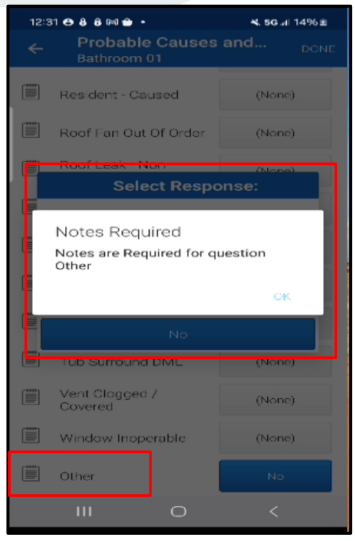
Note: Other

1. This option should be selected if the root cause is not listed or not evident through the standard assessment practices.

   A note and picture(s) are required for this root cause.



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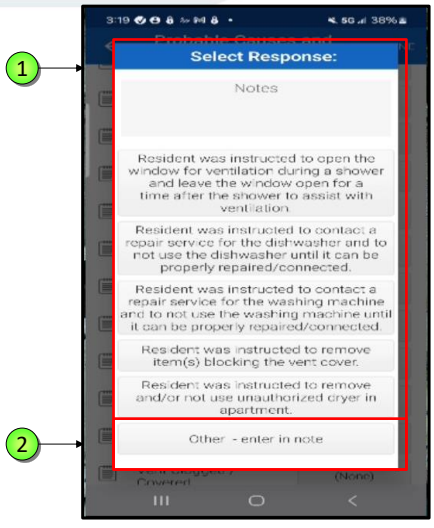
Note: Mold Root Causes – Resident-Caused Code 6

1. Resident - Caused by Other Actions (Code 6) should be selected if the mold can be prevented by adjusting resident behavior and improving resident education.

   Select ONLY with proof that the resident's behavior is the cause.

2. A mandatory inspection will be needed to determine the exact reason(s) for the mold.

   A note and picture(s) are required for this root cause.



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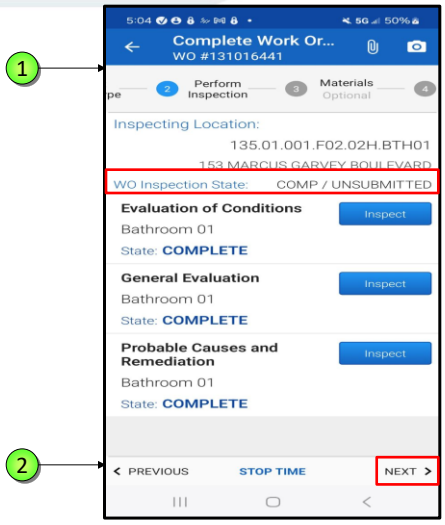
Inspection Status

1. All the **three tasks** now have a Status of **COMPLETE**. The **WO Inspection State** is **COMP/UNSUBMITTED**.

   The Supervisor has answered **all the required fields** after performing the inspection.

2. Tap **NEXT.**



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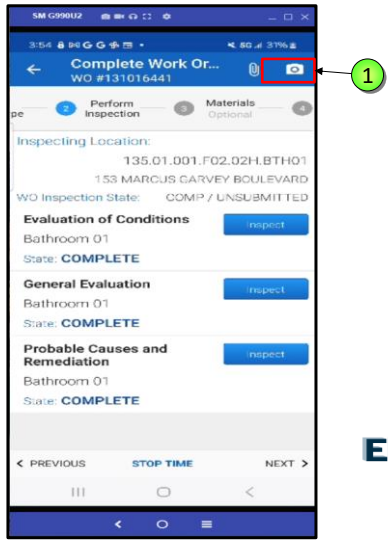
Taking Photos for Work Orders

NYCHA has made it very easy to add photos to work orders. Photos can be taken anytime during the work flow and automatically attached to the work order.

NOTE: Photos are required for **Mold and mildew work orders** as evidence for supervisors and courts to evaluate.

Tap on the **camera icon** in the upper right corner to open the camera.



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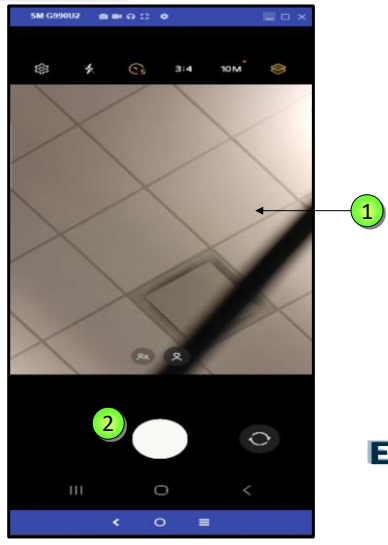
Taking Photos for Work Orders

1. Tap the image on the preview screen to focus the camera.
2. Then, tap the **circle** icon at the bottom of the screen to take the photo.

NOTE: Once you save a picture you cannot delete it.



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Taking Photos for Work Orders

1. You can then type a description to the photo taken.

   Document Type is defaulted to **Informer.**
2. **By utilizing the drop down menu,** the inspector can also select Mold Receipt and **upload receipt**.

   Tap **OK.**

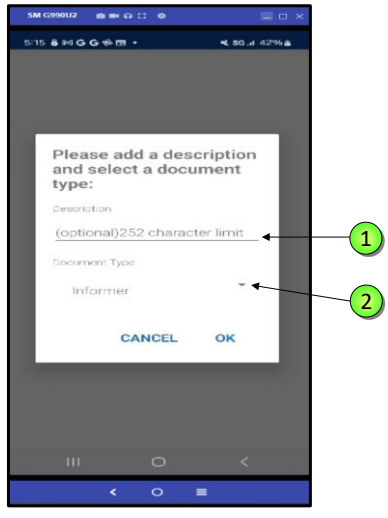

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Photo Requirement

Upload two clear photos of the condition:

- One close - up.
- One wide shot with a standard letter paper size (8.5 X 11 in.) in the photos to show the relative size of the condition.

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Photo Requirement Example

Close - Up: Kitchen

Full View: Kitchen

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Photo Requirement Example

Close - Up: Living Room Ceiling

Full View: Living Room Ceiling

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Photo Requirement Example

Close - Up: Bathroom Window Frame

Close - Up: Bathroom Ceiling

Full View: Bathroom Wall

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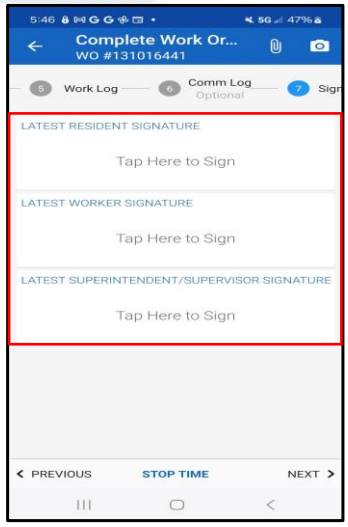
Obtain Signatures

1. The **signatures** screen will display three selections **RESIDENT**, **WORKER** and **SUPERINTENDENT**.

   The worker signature is optional, however it should be used when the inspection is done by a maintenance worker.



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Obtain Signatures

1. The **resident info** screen is displayed. If the **resident refused** to sign, check the box.
2. Alternatively, the resident can enter their **NAME** and any **COMMENTS.** Then tap **DONE**.

   NOTE: This information is optional.
3. Tap **NEXT.**

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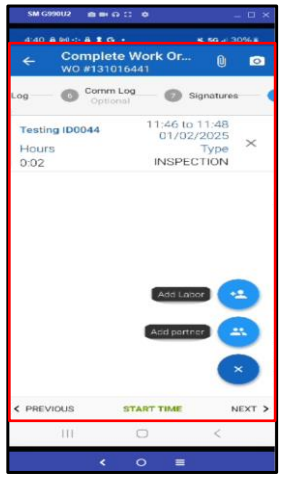
Recording Labor Information

1. Inspector should **STOP TIME.**

2. To add additional labor click on **Add Labor**.
NOTE: This information is optional.

   To add partner labor. click on **Add Partner**.
NOTE: This information is optional.

3. Tap **NEXT.**



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Maximo View of Mold Work Orders - Example

Work Orders for Job | Filter | 1 - 10 of 10

Work Order	Parent WO	Description	Location	Craft	Owner Group	Priority	Failure Class	Problem Code	Actual Reported Date	Status	Status Date	Actual Start	Actual Finish
122328910		Mold Inspection	267.02.003.F21.21D.BTH01	SUPT	DEV267	6	MILDEWCONDITION	MILDEW	3/9/24 9:09 AM	COMP	3/11/24 1:29 PM	3/11/24 12:38 PM	3/11/24 1:29 PM
122438612	122328910	Is there an exhaust fan? CFM's meas	267.02.003.F21.21D.BTH01	MAINT	DEV267	6	EXHAUSTFAN	NEEDSCLEANING	3/11/24 1:29 PM	CLOSE	5/15/24 12:01 PM	5/15/24 11:38 AM	5/15/24 12:01 PM
122438619	122328910	CFM Measure is <25	267.02.R01	MAINT	DEV267	6	ROOFFAN	FOLLOWUP	3/11/24 1:29 PM	CLOSE	5/14/24 8:58 AM	5/14/24 8:45 AM	5/14/24 8:58 AM
122438626	122328910	Is sealant/ caulking present around to	267.02.003.F21.21D.BTH01	MAINT	DEV267	6	TOILET	CAULKBASE	3/11/24 1:29 PM	CLOSE	5/14/24 5:13 PM	5/14/24 4:59 PM	5/14/24 5:13 PM
122438631	122328910	Roof Fan Out Of Order	267.02.R01	MAINT	DEV267	6	ROOFFAN	FANOOO	3/11/24 1:29 PM	CLOSE	5/14/24 4:59 PM	5/14/24 4:48 PM	5/14/24 4:59 PM
122438635	122328910	Caulking DML (Maintenance)	267.02.003.F21.21D.BTH01	MAINT	DEV267	6	BATHTUBSHOWER	NEEDSCAULKING	3/11/24 1:29 PM	CLOSE	5/14/24 5:22 PM	5/14/24 5:13 PM	5/14/24 5:21 PM
122438639	122328910	WALLS: Sheetrock with steel framing	267.02.003.F21.21D.BTH01	CARPENTR	BXCARP	6	WALLS	SHEETROCKDML	3/11/24 1:29 PM	CLOSE	2/7/25 1:01 PM	2/6/25 9:03 AM	2/7/25 1:01 PM
122438647	122328910	WALLS: Sheetrock with steel framing	267.02.003.F21.21D.BTH01	PAINTER	BXPAINT	6	WALLS	NEEDSPAINTING	3/11/24 1:29 PM	APPR	3/11/24 1:30 PM	4/13/24 8:00 AM	4/13/24 8:30 AM
126824478	122328910	3 of 4 roofans are inoperable B side c	267.02.R01	ELECTRCN	BXELEC	6	ROOFFAN	NOPOWER	5/14/24 8:58 AM	CLOSE	7/13/24 4:12 PM	7/13/24 8:00 AM	7/13/24 4:00 PM
134791159	122328910	walls need plastering	267.02.003.F21.21D	PLASTER	BXPLASTR	6	WALLS	NEEDSPLASTERING	2/7/25 12:59 PM	APPR	2/7/25 12:59 PM		

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Public Space Mold Inspections

- To inspect mold in public spaces or other non-residential spaces, an employee who observes mold should create a parent CM work order on the handheld.
- If the employee does not have the ability to create a work order on the handheld, they should inform the property maintenance supervisor.

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Public Space Mold Inspections

The inspector:

- Performs the mold inspection and records their observations in the work order log, including the square footage of mold and moisture readings.
- Takes photo(s) of the condition(s) identified, including multiple close-up photos from different angles of the condition(s) and at least one photo of the larger area, using a handheld device. Include a standard letter-sized paper (8 ½ x 11) in the photo(s) to show perspective re: the amount of mold.
- If mold is identified, the property maintenance supervisor or employee who responds to the work order creates a parent work order under failure class "MILDEWCONDITION" and problem code "MILDEW". Child work orders for mold remediation and repair tasks will appear under the parent work order.

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IWM App Practical Exercises

- Mold Inspection Work Orders - CM
  - Kitchen Issues

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NYCHA MOLD TRAINING

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Introduction to Mold Remediation

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Remediation Basics

- Contain
  - Use plastic sheeting and duct tape.
  - Use decontamination staging areas.
- Control
  - Engineer controls and work practices.
- Clean
  - Use cleaners and disinfectants.
- Coat

Use the four C's!

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Containment

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Control - HEPA Filtration

- High Efficiency Particulate Filters (HEPA) – capture contamination.
- 99.97% efficient to 0.3 microns.

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Engineering Controls

- Engineering controls are used to reduce or remove a hazard.
- Clean often and before exiting the work area to control the spread of contamination.

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Clean

- Use specialized detergents for mold remediation.
- Use anti-microbial cleaners first then disinfectants after cleaning is complete.
- NYCHA approved products:
  - Microbiowash
  - Shockwave
  - Enviro Care Neutral Surface Disinfectant

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NYCHA Product - Cleaner

Micro Bio-Wash Cleaner

- NYCHA Approved mold cleaner HA# 0806938344.
- Staff must follow directions.
- Use correct dilution.
- Allow adequate dwell time.
- Safe for use on washable surfaces.

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NYCHA Product - Disinfectant

Shockwave RTU

- NYCHA Approved mold disinfectant HA# 080657583.
- Staff must follow directions.
- No dilution.
- Apply product with a cloth, sponge or other suitable applicator until surface is thoroughly wet.
- Wait 10 minutes and wipe dry or air dry.

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Follow Manufacturer's Directions

- Use the right dilution.
- Use the right application.
- Change solution when recommended.
- Avoid cross-contamination.

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Sodium Hypochlorite (Bleach)

Disadvantages

- Not compatible with all surfaces.
- Safety issues.
- Not a cleaner.
- Inactivated by heavy organic soil.
- Unstable.

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Coatings

- Mold resistant coatings that contain fungistatic agents to resist mold growth on the dry coating surface.
- Recommended for use on wood, plaster, wallboard, sheetrock, concrete, masonry block, primed metal, and galvanized metal.
- NYCHA Approved HA #s in SP appendix.

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New Approved Paint

- Sherwin-Williams Emerald paint is an approved mold resistant paint as of May 2025.
- The paint possesses mold-resistant properties similar to Foster 40/50.
- The paint is more aesthetically pleasing and its use results in time savings due to fewer paint applications needed (compared to Foster 40/50).
- It comes in two colors: white and tan.

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Points to Remember

- Eliminating water is the best way to eliminate fungi.
- You cannot disinfect and kill fungi without cleaning first.
- Choose the right chemicals and/or equipment for the job and follow manufacturer's directions.
- Healthy employees are the best!

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

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Root Cause Repairs and Remediation Procedures

All root cause repairs and remediation work must conform to the protocols in the following documents:

- SP 040:14:1, *Mold/Mildew Control in NYCHA Buildings Appendix A, Remediation Methods*.
- SP 040:18:02, *Revised, Maintenance Tasks – Dust Control and Clean Up in Apartments.*

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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 Healthy Homes Asbestos Unit for further instructions.

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Remediation Procedures

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 of following:

- 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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Pipe Insulation Guidance

- K-flex is no longer the approved insulation product.
- Fiberglass should be used and is available in storerooms.
- Use of appropriate PPE is required when handling this material.
- Interim Guidance in Course Manual.

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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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Ceiling: Painted Concrete (All Rooms)

- HEPA vacuum and clean surfaces displaying water damage, mold growth, and/or that measure wet with a NYCHA-approved disinfectant or cleaning solution.
- Wet-scrape loose or damaged paint from surfaces to remove the affected paint and top-coated plaster/skim-coating to which the paint is adhered. Continue wet scraping to a point of 12 inches beyond any visible water damage, mold growth, and/or areas that measure wet.
- Apply NYCHA-approved mold resistant coating.
- Repaint with mold resistant paint.

NOTE: When a ceiling is textured and the material may be disturbed, the Property Maintenance Office must contact the Asbestos Department for guidance.

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Ceiling: Sheetrock with Steel Framing (Leak or Condensation; All Rooms)

- Remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measures wet. Continue removal to a point of at least six 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 up to the next available framing member. In areas where significant water damage, mold growth, or moisture is present on sheetrock, a HEPA vacuum should be used at the point of dust generation during the sheetrock removal work.
- Replace sheetrock with fiberglass-faced gypsum board. For seam taping, use fiberglass mesh tape in place of paper tape.
- Apply NYCHA-approved mold resistant compound.
- Repaint with mold resistant paint.

NOTE: When a ceiling is textured and the material may be disturbed, the Property Maintenance Office must contact the Asbestos Department for guidance.

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Ceiling: Sheetrock with Steel Framing (Leak or Condensation; All Rooms)

- Remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measures wet. Continue removal to a point of at least six 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 up to the next available framing member. In areas where significant water damage, mold growth, or moisture is present on sheetrock, a HEPA vacuum should be used at the point of dust generation during the sheetrock removal work.
- HEPA vacuum and clean with a NYCHA-approved disinfectant or cleaning solution any wood framing components displaying minor levels of water damage and/or mold growth.
- Paint any wood framing components displaying dried water damage and/or minor levels of mold growth conditions with fungicidal/fungistatic coating, only after all mold is remediated.
- Remove and replace wood framing displaying significant mold growth.
- Replace sheetrock with fiberglass-faced gypsum board. For seam taping, use mesh fiberglass tape in place of paper tape.
- Repaint with mold resistant paint.

NOTE: When a ceiling is textured and the material may be disturbed, the Property Maintenance Office must contact the Asbestos Department for guidance.

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Walls: Painted Plaster (Leak or Condensation; All Rooms)

- HEPA vacuum and clean surfaces displaying water damage, mold growth, and/or that measure wet with a NYCHA-approved disinfectant or cleaning solution.
- 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.
- Apply NYCHA-approved mold resistant coating.
- Repaint with mold resistant paint.

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

- Remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measure wet. Continue removal to a point of at least six 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 up to the next available framing member. In areas where significant water damage, mold growth, or moisture is present on sheetrock, a HEPA vacuum should be used at the point of dust generation during the sheetrock removal work.
- Replace sheetrock with fiberglass-faced gypsum board. For seam taping, use fiberglass mesh tape in place of paper tape.
- Apply NYCHA-approved mold resistant compound.
- Repaint with mold resistant paint.

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

- Remove and dispose of sheetrock displaying visible water damage, mold growth, and/or that measures wet. Continue removal to a point of at least six 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 up to the next available framing member. In areas where significant water damage, mold growth, or moisture is present on sheetrock, a HEPA vacuum should be used at the point of dust generation during the sheetrock removal work.
- HEPA vacuum and clean with a NYCHA-approved disinfectant or cleaning solution any wood framing components displaying minor levels of water damage and/or mold growth. Paint any wood framing components displaying dried water damage and/or minor levels of mold growth conditions with fungicidal/fungistatic coating, only after all mold is remediated.
- Remove and replace wood framing displaying significant mold growth.
- Replace sheetrock with fiberglass-faced gypsum board. For seam taping, use mesh fiberglass tape in place of paper tape.
- Repaint with mold resistant paint.

NOTE: When a ceiling is textured and the material may be disturbed, the Property Maintenance Office must contact the Asbestos Department for guidance.

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Floors: Finished Wood Floors (Leak or Condensation; All Rooms)

- Remove and dispose of finished wood floorboards displaying significant water damage (buckling) and/or that measure wet. Continue removal to a point of 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.
- Examine joist elements to assess the extent of mold growth. If a joist shows signs of mold and/or water damage, consider replacing the entire joist or, if feasible, performing joist sistering. Use a HEPA vacuum, clean thoroughly with a NYCHA-approved disinfectant or cleaning solution, apply NYCHA-approved mold resistant coating, and repaint with mold resistant paint.
- 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.
- Replace flooring.

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

- Clean surfaces thoroughly using a NYCHA-approved disinfectant or cleaning solution.
- Inspect the extent of the damage to the ceramic tiles, replace tiles in areas that have missing tiles, and reenforce loose tiles.

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Floors: Vinyl Floor Tiles (Leak or Condensation; All Rooms)

- Remove and dispose of water-damaged vinyl floor tiles or tiles measuring wet.
- HEPA vacuum underlying concrete slab and clean using a NYCHA-approved disinfectant or cleaning solution.
- Replace floor tiles.

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Kitchen Cabinetry and Bathroom Vanities (Significant Mold)

- Remove and dispose of cabinetry.
- Replace cabinetry.

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

Clean surfaces thoroughly using a NYCHA-approved disinfectant or cleaning solution.

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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 1,100 degrees Fahrenheit or charring the paint.
- Paint stripping using a volatile stripper in poorly ventilated space.
- Dry sanding or scraping, except within one foot of electrical fixtures (e.g. switches, outlets, light fixtures, breaker boxes).

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NYCHA MOLD TRAINING

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Work Site Hazards

- Physical
  - Confined space
  - Electrical
  - Slips, trips and falls
  - Heat-related disorders
- Chemicals
  - Asbestos containing materials
  - Lead based paint
  - Cleaners, disinfectants and sealers

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Chemical Work Site Safety Hazards

- Asbestos Containing Materials (ACM)
- Lead (LBP)
- Chemicals
  - Cleaners
  - Disinfectants
  - Sealers

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Work Site Safety Hazards

- Sharp objects
- Slippery surfaces
- Falling objects
- Terrain
- Unstable surfaces
- Burns
- Improper lifting ergonomic hazards
- Pinch points
- Environmental (weather, animals, poisonous plants)
- Struck-by/roll Over
- Public/other Contractors
- Dehydration

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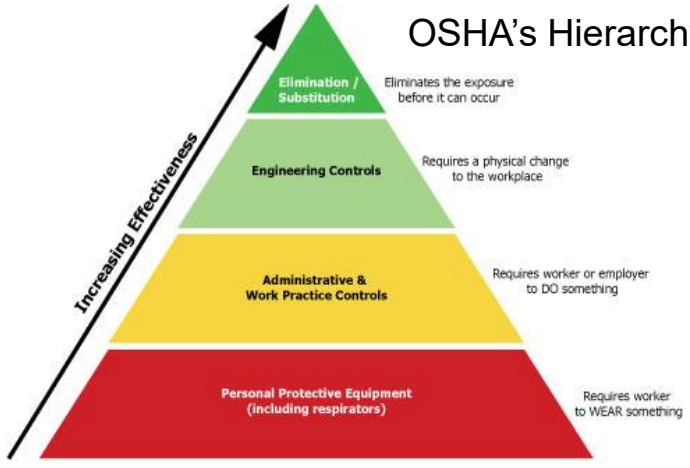
Workplace Hazards

OSHA's Hierarchy of Controls



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Personal Protective Equipment

- 29 CFR 1910.132
- “Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices…shall be provided, used and maintained whenever it is necessary by reason of hazards of processes or environment… capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.” - OSHA

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Protective Clothing

- Hoods and boots.
- Respirator inside of hood.
- Oversize suits for ease of movement.
- Reinforce suits with duct tape.
- Tape wrists to gloves, ankles.

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Respiratory Protection

Respirators are the last option after:

- Engineering controls.
- Administrative controls.
- Work practices.
- Alternative materials.
- Other methods.

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NIOSH

NIOSH Recommendation:

"Respiratory protection may be necessary for certain operations or methods such mold removal and paint removal by chemicals, heat gun, or abrasive techniques, and some set-up, and cleaning operations. However, respirators are the least preferred method of controlling airborne Mold exposure, and **they should not be used as the only means of preventing or minimizing exposures. Respiratory protection requirements are not an acceptable substitute for adequate training, supervision, appropriate engineering controls, and environmental or medical monitoring.** Initial respiratory protection requirements for abatement work (which may be based on conservative assumptions) should be modified with appropriate job-specific requirements based on air monitoring results. Respirator selection for each job category at every worksite should be determined by an industrial hygienist or other qualified individual, based on maximum airborne exposures measured."

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Personal Protective Equipment

- Employees using respirators must follow the requirements in SP 001:17:2, *Respiratory Protection Safety Program*.
- Employees can contact the Environmental Health and Safety Department at ehs@nycha.nyc.gov if guidance is needed on PPE recommendations or requirements.

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Personal Protective Equipment

Mold Remediation of Less than 100 Square Feet

Employees must wear the following:

- An N95 disposable respirator such as dust mask or more protective respirator in accordance with the OSHA respiratory protection standard (29 CFR 1910.134).
- Disposable protective clothing covering both head and shoes.
- Gloves.
- Eye protection.

NOTE: NYCHA employees who perform oversight and construction project management inspections during active mold remediation (whether performed by NYCHA employees or vendors) must follow the PPE requirements listed directly above.

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Personal Protective Equipment

Mold Remediation of 100 Square Feet or More (Large Remediation Jobs)

Employees must wear the following:

- A minimum of a half-face elastomeric respirator with a P-100 filter used in accordance with OSHA respiratory protection standard (29 CFR 1910.134).
- Disposable protective clothing covering both head and shoes.
- Gloves.
- Eye protection.

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Respiratory Program

Minimum Requirements:

- Written SOP.
- MSHA/NIOSH certified respirators.
- Appropriate for hazard.
- Training of wearer.
- Individual respirators.
- Cleaning and disinfection.
- Respirator storage.
- Inspection and repair.
- Work area monitoring.
- Medical review.
- Annual evaluation of respiratory program.

NOTE: For NYCHA Respirator Program see NYCHA SP 001:17:2 *Respiratory Protection Safety Program*.

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Types of Respirators

- Three levels of particulate filter efficiency are 95%, 99%, and 99.97%.
- The three categories of resistance to filter efficiency degradation are labeled N, R, and P. The class of filter will be clearly marked on the filter, filter package, or respirator box.

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Types of Respirators

- **Filter Efficiency** - selection of filter efficiency (i.e., 95%, 99%, or 99.97%) depends on how much filter leakage can be accepted. Higher filter efficiency means lower filter leakage.
- **Oil Resistance** - selection of N-, R-, and P-series filters depends on the presence or absence of oil particles, as follows. If no oil particles are present in the work environment, use a filter of any series (i.e., N-, R-, or P-series).
  - If oil particles (e.g., lubricants, cutting fluids, glycerin, etc.) are present, use an R- or P-series filter.

NOTE: N-series filters cannot be used if oil particles are present.

  - If oil particles are present and the filter is to be used for more than one work shift, use only a P-series filter.

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Types of Respirators

- Half Face Negative Pressure
- N100 Fitted Facepiece
- N95 Fitted Facepiece
  (e.g. dust mask)

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Asbestos: What Is It?

Asbestos minerals share some common characteristics:

- Naturally occurring from ores rich in magnesium, calcium, silica, and iron.
- High tensile strength along the axis of the fiber.
- Chemically inert.
- Non-combustible.

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Mold on Asbestos Containing Materials

ACM- Pipe insulation (T.S.I)

ACM- Spackle/Joint compound

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Definition

- ACM - **A**sbestos **C**ontaining **M**aterials
  - Any material that contains **greater** than 1% asbestos fibers.
- PACM - **P**resumed **A**sbestos **C**ontaining **M**aterials
  - Any TSI, Surfacing, or miscellaneous vinyl/asphalt flooring or roofing installed before 1980.
- New York State Department of Labor (NYSDOL), United States Environmental Protection Agency (EPA), and the Occupational Safety and Health Administration (OSHA) all have specific requirements for the testing, handling and disposal of ACM.

NOTE: Check with NYCHA EH&S and all applicable regulations before disturbing any known or suspect ACM/PACM present on a mold remediation/assessment.

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ACM at NYCHA

ACM- Pipe insulation (T.S.I)

ACM - Flooring

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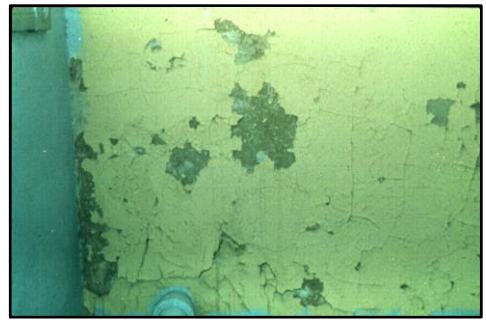
Lead Based Paint

On mold remediation projects lead based paint can also be impacted.

- It will typically be in the paint on or near the areas with mold growth.
- Demolition or removal of these painted surfaces can create potentially dangerous exposures to lead dust and lead contaminated debris.



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Why are Dust and Debris a Problem?

- Remediation activities that disturb lead-containing materials create dust and debris.
- Lead-contaminated dust is poisonous.
- Very small amounts of lead-contaminated dust can poison children and adults.
  - **Children swallow dust during ordinary play activities.**
  - **Adults swallow or breathe dust during work activities.**
- Workers can bring lead-contaminated dust home and poison their families.

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Employees Who Remediate or Correct the Root Causes of Mold

Lead-safe work practices and RRP certified workers must be used if Maximo identifies that RRP work is required (the apartment is presumed or known to contain lead-based paint) and any work would disturb:

- More than 2 sq. ft. of a painted surface per room.

  OR
- More than 10% of the total surface area on an interior or exterior type of component with a small surface area.

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Hazard Communication

Mold remediation involves use of:

- Cleaners.
- Disinfectants.
- Anti-microbials.
- Biocides.

Chemicals in these substances require that employees have hazard communication programs in place.

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HAZCOM

OSHA has estimated that more than 32 million workers are exposed to 650,000 hazardous chemical products in more than 3 million American workplaces.

Does this pose a serious problem for exposed workers and their employers?

What do you think?

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Hazard Communication

The OSHA **Hazard Communication Standard** provides workers the right-to-know concerning the hazards and the identities of the chemicals they are, or may have the potential to be, exposed to in the workplace.

The basic goal of a **Hazard Communication Program** is to be sure employers and employees know about work hazards and how to protect themselves; this should help to reduce the incidence of chemical source illness and injuries.

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Steps to an Effective HAZ-COM program

- Perform a hazard assessment.
- Develop a written HAZCOM plan.
- Appoint a HAZCOM Coordinator.
- Conduct the chemical inventory.
- Initiate labeling requirements.
- Maintain a safety data sheet (SDS) library.
- Establish employee training.

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Hazard Determination

- The standard requires that employers inventory all hazardous chemicals in the workplace and include that inventory as a part of the written hazard communication program.
- This inventory will eventually serve as a master list for which a SDS library must be obtained and maintained.

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Safety Data Sheets

- Chemical manufacturers and importers are required to obtain or develop a safety data sheet for each hazardous chemical they produce or import. Distributors are responsible for ensuring that their customers are provided a copy of these SDSs. Employers must have an SDS for each hazardous chemical which they use.

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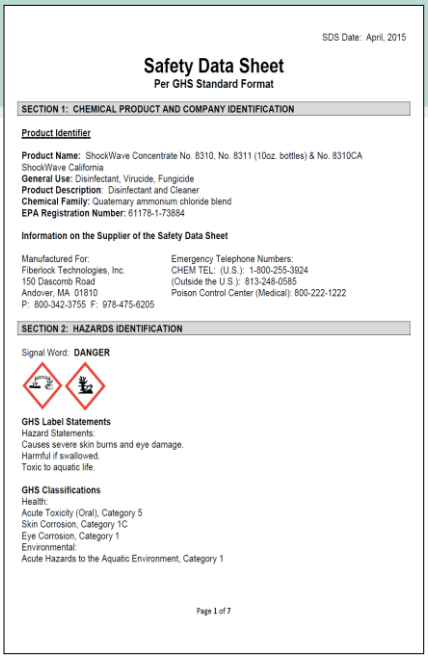

SDS Date: April, 2015

Safety Data Sheet
Per GHS Standard Format

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: ShockWave Concentrate No. 8310, No. 8311 (10oz. bottles) & No. 8310CA
ShockWave California
General Use: Disinfectant, Virucide, Fungicide
Product Description: Disinfectant and Cleaner
Chemical Family: Quaternary ammonium chloride blend
EPA Registration Number: 61178-1-73884

Information on the Supplier of the Safety Data Sheet

Manufactured For:
Fiberlock Technologies, Inc.
150 Dascomb Road
Andover, MA 01810
P: 800-342-3755 F: 978-475-6205

Emergency Telephone Numbers:
CHEM TEL: (U.S.): 1-800-255-3924
(Outside the U.S.): 813-248-0585
Poison Control Center (Medical): 800-222-1222

SECTION 2: HAZARDS IDENTIFICATION

Signal Word: **DANGER**

GHS Label Statements
Hazard Statements:
Causes severe skin burns and eye damage.
Harmful if swallowed.
Toxic to aquatic life.

GHS Classifications
Health:
Acute Toxicity (Oral), Category 5
Skin Corrosion, Category 1C
Eye Corrosion, Category 1
Environmental:
Acute Hazards to the Aquatic Environment, Category 1

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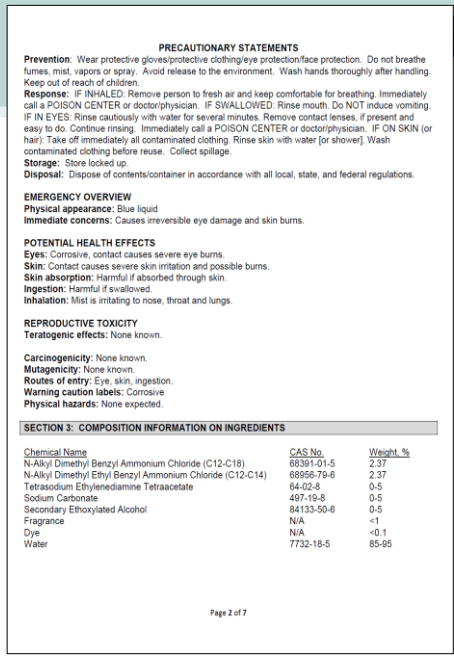

PRECAUTIONARY STATEMENTS

Prevention: Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe fumes, mist, vapors or spray. Avoid release to the environment. Wash hands thoroughly after handling. Keep out of reach of children.
Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Wash contaminated clothing before reuse. Collect spillage.
Storage: Store locked up.
Disposal: Dispose of contents/container in accordance with all local, state, and federal regulations.

EMERGENCY OVERVIEW
Physical appearance: Blue liquid
Immediate concerns: Causes irreversible eye damage and skin burns.

POTENTIAL HEALTH EFFECTS
Eyes: Corrosive, contact causes severe eye burns.
Skin: Contact causes severe skin irritation and possible burns.
Skin absorption: Harmful if absorbed through skin.
Ingestion: Harmful if swallowed.
Inhalation: Mist is irritating to nose, throat and lungs.

REPRODUCTIVE TOXICITY
Teratogenic effects: None known.

Carcinogenicity: None known.
Mutagenicity: None known.
Routes of entry: Eye, skin, ingestion.
Warning caution labels: Corrosive
Physical hazards: None expected.

SECTION 3: COMPOSITION INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight, %
N-Alkyl Dimethyl Benzyl Ammonium Chloride (C12-C18)	68391-01-5	2.37
N-Alkyl Dimethyl Ethyl Benzyl Ammonium Chloride (C12-C14)	68956-79-6	2.37
Tetrasodium Ethylenediamine Tetraacetate	64-02-8	0-5
Sodium Carbonate	497-19-8	0-5
Secondary Ethoxylated Alcohol	84133-50-6	0-5
Fragrance	N/A	<1
Dye	N/A	<0.1
Water	7732-18-5	85-95

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Employee Responsibilities

- Know where to get information about hazardous substances used, stored, or handled at your inspection sites.
- Learn to read labels and understand SDSs.
- Identify hazards before you begin a task.
- Do not be afraid to ask questions.
- Use personal protective equipment.

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Confined Spaces

NYCHA staff may encounter the following confined spaces during mold remediation:

- Roof fan housing
- Chimneys
- Interstitial spaces
- Elevator shafts
- Others?

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Confined Spaces

- Definition of a confined space is any space that:
  - A person can enter.
  - Has a limited opening for entry or exit.
  - Is not designed for continuous occupancy.
- A confined space that has any associated hazard is considered a permit-required confined space.
- Hazards can include oxygen deficient or enriched atmospheres, toxic or flammable atmospheres, mechanical or electrical hazards, falls, engulfment, etc.

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NYCHA Mold Inspector

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Confined Spaces

60% of confined space deaths are among would-be rescuers.

Don't become a statistic!

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Electrical Hazards

- Electrocution and electric shocks are among the most common hazards.
- Incorrect wiring, improper grounding, and lack of proper insulation result in over 1,000 people being electrocuted each year.

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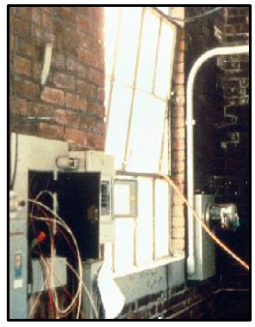
Hazard – Damaged Cords

- Cords can be damaged by:
  - Aging.
  - Door or window edges.
  - Staples or fastenings.
  - Abrasion from adjacent materials.
  - Activity in the area.
  - Improper use can cause shocks, burns or fire.



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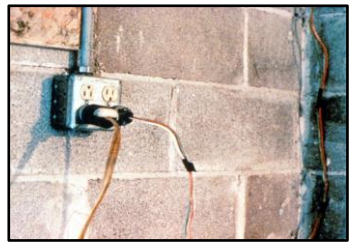
Hazard – Defective Cords and Wires

- Plastic or rubber covering is missing.
- Damaged extension cords and tools.



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Hazard – Improper Grounding

- Tools plugged into improperly grounded circuits may become energized.
- Broken wire or plugs on extension cords.
- Some of the most frequently violated OSHA standards.

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Clues that Electrical Hazards Exist

- Tripped circuit breakers or blown fuses.
- Warm tools, wires, cords, connections, or junction boxes.
- GFCI that shuts off a circuit.
- Worn or frayed insulation around wire or connection.

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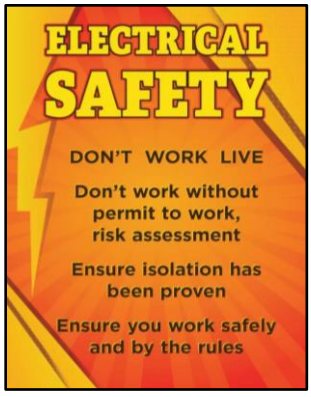
Worker Responsibilities



- Being aware of potential hazards.
- Knowing how hazards should be treated.
- Knowing what to do to protect themselves from electrical shock while working in work area.

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Slips, Trips, and Falls

- Mold remediation sites present some significant risks for slips, trips and falls.
- Non-slip rubber boots or shoes with non-skid soles can greatly reduce slips and falls when working on wet polyethylene.
- No running, jumping, or “horseplay” should be allowed in the work area.

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Problems With Heat

- The body naturally tries to cool itself by sweating
- If you are wearing an impermeable suit, your body heat cannot escape.
- Your lungs are already in overdrive due to the added stress of the respirator.
- The air conditioning has been shut off for the summer, and the air in the work area is much warmer than the air outside.
- The above are perfect conditions for the onset of HEAT STRESS or HEAT STROKE.

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Hazard Recognition

Hurt at Work

- You've carefully thought out all angles.
- You've done it a thousand times.
- It comes naturally to you.
- You know what you're doing, it's what you've been trained to do your whole life.
- Nothing could possibly go wrong, right?

Think Again!

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End of Day 2

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NYCHA MOLD TRAINING

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Quality Assurance Inspections

- Maximo automatically generates a quality assurance inspection work order 25 days after the last child work order is closed for all apartments where a mold, water damage, or a moisture 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.

NOTE: See SP Section VIII.A.3 for the process to schedule appointments.

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Quality Assurance Inspections

- For quality assurance purposes, whenever possible the inspector conducting the quality assurance inspection should be different than the inspector who performed the initial inspection.
- Quality assurance inspections are performed using the handheld device. If a handheld device is not operating during the quality assurance inspection, the inspector must record the results on a paper quality assurance inspection work order and enter the results into Maximo immediately following the quality assurance inspection.

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Quality Assurance Inspections

Prior to visiting the apartment on the day of the quality assurance inspection appointment, the inspector:

- Checks the mold inspection tool kit, to ensure that the following instruments are in working order: anemometer, hygrometer, and moisture meter.
- Brings all the tools to the quality assurance inspection in case a full new initial inspection is needed.
- Assigns a maintenance worker to accompany them on the quality assurance inspection or be on call in case there is follow up work or a full new initial inspection is required. The maintenance worker must bring a borescope and tools appropriate for making wall-breaks.
- Must make a courtesy call to the resident via the handheld device on the way to the quality assurance inspection to remind them of the appointment. If the resident does not answer the call, the inspector must still go to the apartment at the scheduled time.

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Quality Assurance Inspections

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

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Quality Assurance Inspections

If mold, water damage, or moisture is found during the quality assurance inspection:

- The inspector completes and closes the quality assurance inspection work order.
- Maximo automatically generates a new parent mold work order (re-inspection).
- The inspector immediately conducts a full mold inspection as a follow up.

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Quality Assurance Inspections

If an air flow measurement was taken during the initial inspection:

- The inspector uses an anemometer to take an air flow measurement in cubic feet per minute (CFM) of the kitchen or bathroom exhaust vent.

The user must ensure the anemometer is properly calibrated by:

- Entering the correct size of the exhaust duct (i.e. the height and width in inches).
- Ensuring that the Free Air Percentage is set to 55%.

NOTE: See SP Appendix C for instructions on how to use the anemometer. Users must follow the manufacturer's instructions when using inspection tools.

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Quality Assurance Inspections

Confirms that all work (e.g. child work orders) to remediate mold and correct root causes and related conditions was satisfactorily completed.

The inspector:

- Reviews the work actuals of the child work orders using the handheld device.
- Visually inspects all completed work in the apartment related to the child work orders.

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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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Quality Assurance Inspections

If additional work is needed, the inspector advises the resident of:

- The next steps to complete the work and the required timeframe for completion of all work.
- The requirement for a new quality assurance inspection once the work is completed.

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Quality Assurance Inspections

Quality Assurance Inspection Complete – All Work Satisfactorily Completed

The inspector:

- Reviews the quality assurance inspection findings with the resident.
- Requests that the resident sign the quality assurance inspection work order on the handheld device confirming that mold and any related conditions are not present and that all work was completed satisfactorily.
- Indicates on the handheld device if the resident refuses to sign or is dissatisfied with the work.
- Provides the resident with the name and contact information of the ombudsperson.
- Closes the quality assurance inspection work order.

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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 uploads the photo(s) to Maximo.

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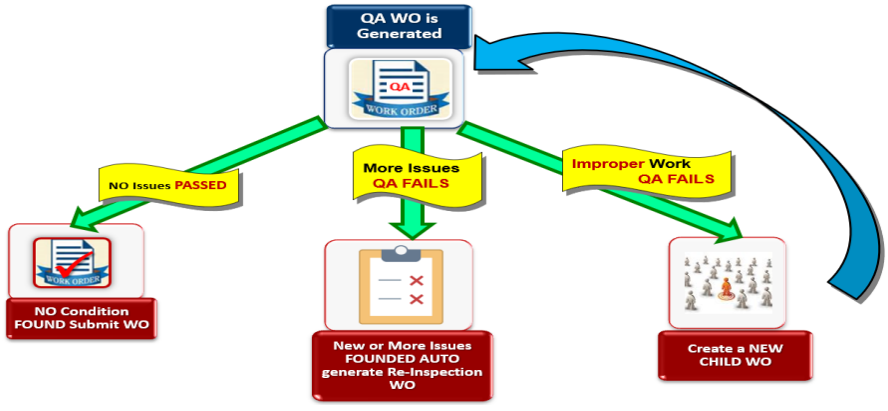
Quality Assurance Inspections

QA Paths



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Quality Assurance Inspections

QA and Re-Inspection Workflow Process

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View QA Work Order Details

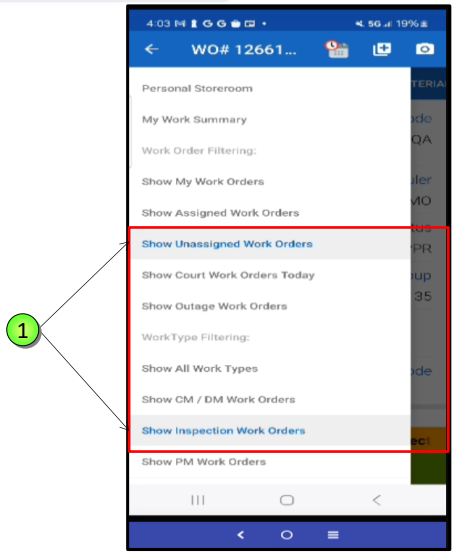
1 The first **QA Work Order** appears in:

- **Show Unassigned Work Orders**
- **Show Inspection Work Orders**

NOTE: The **QA Work Order** is automatically generated in **Maximo 25-days**, and the new **Target Start Date** will be set to **30 days** after the last Child Work Order is closed (or **25-days** after the mold inspection gets closed if no children are created).

The **Target Finish Date** is set to **15 days** after the **Target Start Date**.

If either **Target Start Date** or **Target Finish Date** fall on a weekend or a holiday, then **next business day**.



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View QA Work Order Details

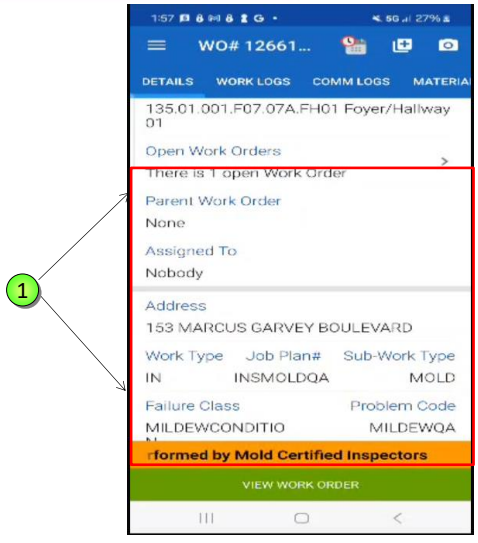
1

The start of the QA Process assumes **Mold Growth**, **Water Damage** or the **Moisture Measurement** question was answered **YES** in the **Mold Inspection**. If any were **YES**, this means a condition was found, and therefore, a QA Inspection must be done.

If all were **NO**, this means no issue was found on the inspection, and no QA gets generated.

Remember the QA work orders are auto-generated **25 days** after the **last** child work order is closed.

Description – Mold QA Inspection



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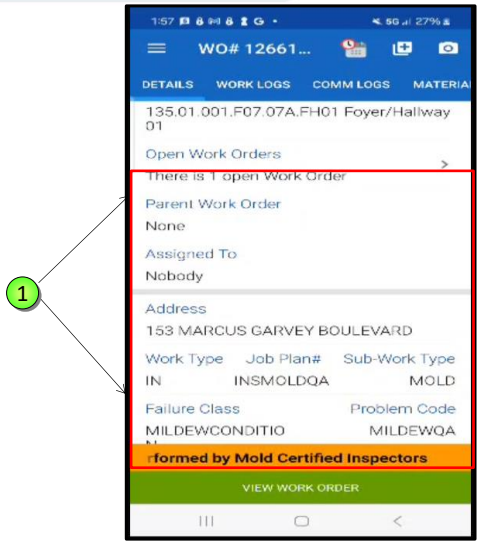
View QA Work Order Details

1

The **Work Order Type** and **Job Plan** have changed in **Mold QA** as they appear on the screen.

Work Type = IN
Job Plan = INSMOLDQA
Sub-Work Type = MOLD
Failure Class = MILDEWCONDITION
Problem Code = MILDEWQA

Tap **VIEW WORK ORDER**



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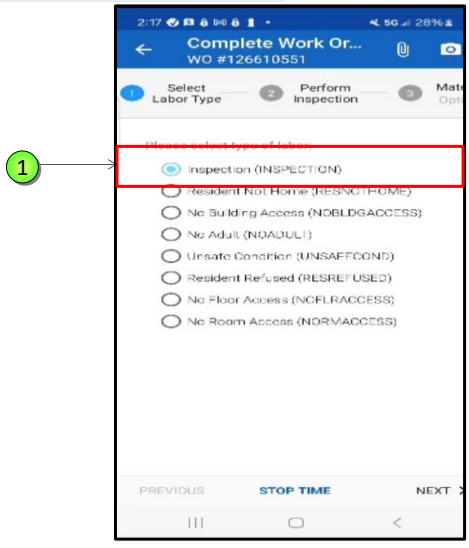
View and Select Labor

1. After reviewing the **WO Details** the user is now ready to begin the work. **START TIME** is displayed at the bottom of the screen.

   Select **inspection.**

   Tap **NEXT.**



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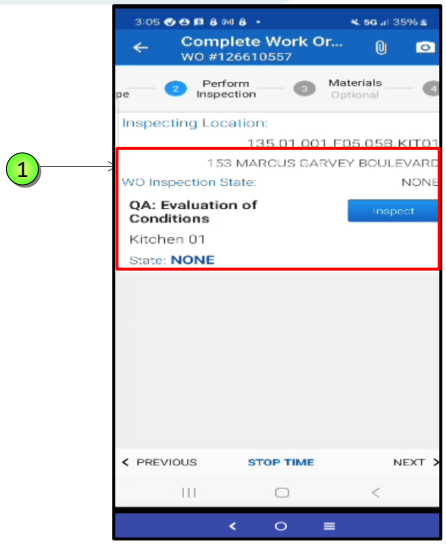
View and Select Labor

1. **QA Task 1: Evaluation of Conditions.**

   WO Inspection State is **NONE.**

   Tap **INSPECT.**



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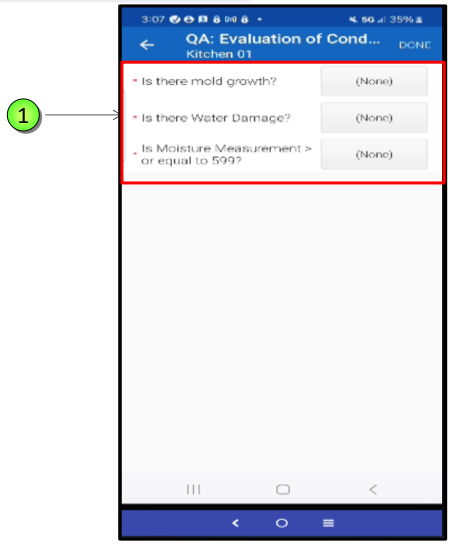
QA: Evaluation of Conditions

1

If the user answers **YES** to any of these questions, this triggers the process for **re-inspection** as the **QA has failed.** The remaining questions on the QA do not have to be answered.

Maximo will generate a **re-inspection work order** once the user submits their results on the QA.

On the **QA work order**, the user is asked:
Mold Growth?
Water Damage?
Moisture Measurement >= 599



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QA: Evaluation of Conditions

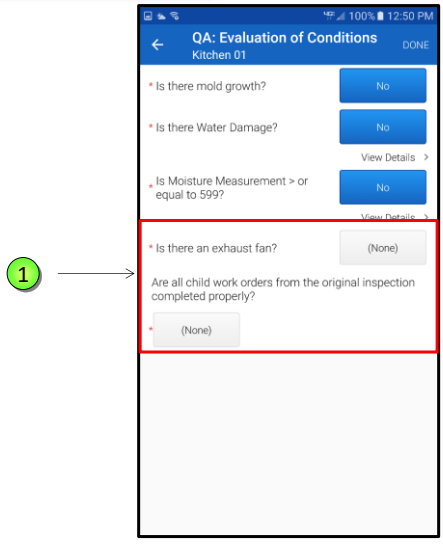
1

Answer **NO** for **"Is there mold growth?"** question.

If **no mold growth**, **water damage** or **moisture measurement** was found, the remaining QA questions **must be answered**.

Maximo checks if the location of the QA work order was a bathroom or kitchen. This prompts the **exhaust fan** question and the prompt asks for a CFM measurement.

Maximo will also ask if **all child work orders from the original inspection were completed properly.**



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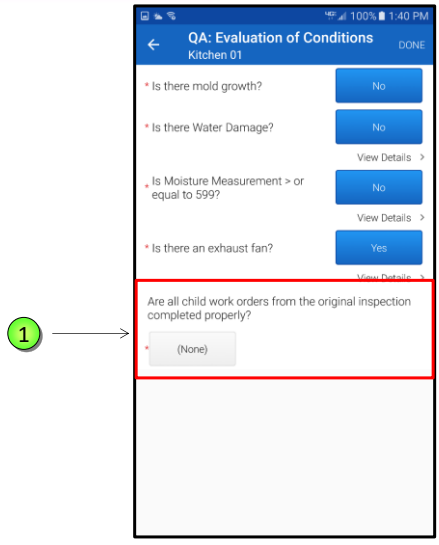
QA: Evaluation of Conditions

1. If no **mold growth**, **water damage** or **moisture measurement** was found on the QA work order, the user must answer the question verifying that **"All child work orders from the original inspection were completed properly."**

   If **YES**, the QA work order has passed and the process is complete.

   If **NO**, the QA work order fails because the children work orders were not completed properly.



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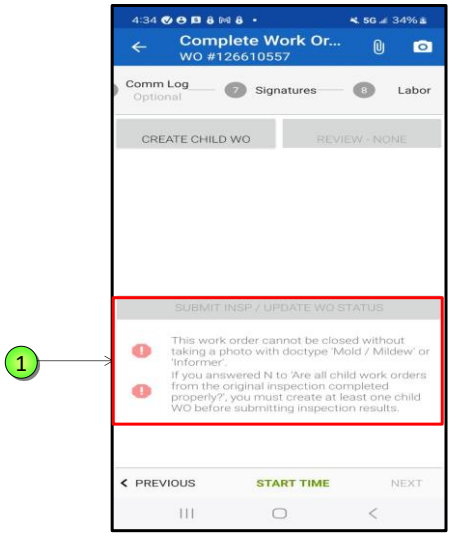
QA: Submitting the Work Order

1. Complete the process as before in the Mold Inspection **for Comm Log, Signatures,** and **Labor** screens.

   Remember if you answered **NO** to the question "**Are all child work orders from the original inspection completed properly?"** you must create a child work order before submitting the **QA inspection** results.

   In this case, tap the **CREATE CHILD WO** gray bar and follow the instruction for creating a child work order.



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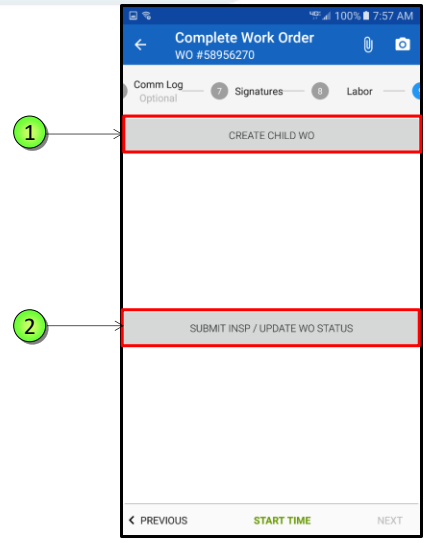
QA: Submitting the Work Order

1. If you want to **create a child WO** for an issue other than mold, tap on **CREATE CHILD WO** gray bar.
2. When all the errors are corrected, you can click the **SUBMIT INSP/ UPDATE WO STATUS** gray bar.



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QA: Submitting the Work Order

There are **3 paths** for a QA Work Order:

- **FIRST -** QA passes.
- **SECOND -** QA fails for mold or water damage.
- **THIRD -** QA fails because a child work order to fix the issues from the initial inspection wasn't done properly.
  - So no mold/water damage/moisture was found (all **NO**), but child WO question indicates a failure. In this case the inspector must **manually** create a child WO to fix the improperly done one.
  - No r**e-Inspection WO i**s generated. Once the child the inspector created is done, it will **generate** another QA.

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IWM App Practical Exercises

- Mold **QA** Work Orders – IN
  - Kitchen 01
  - Bathroom 01

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Re-Inspection

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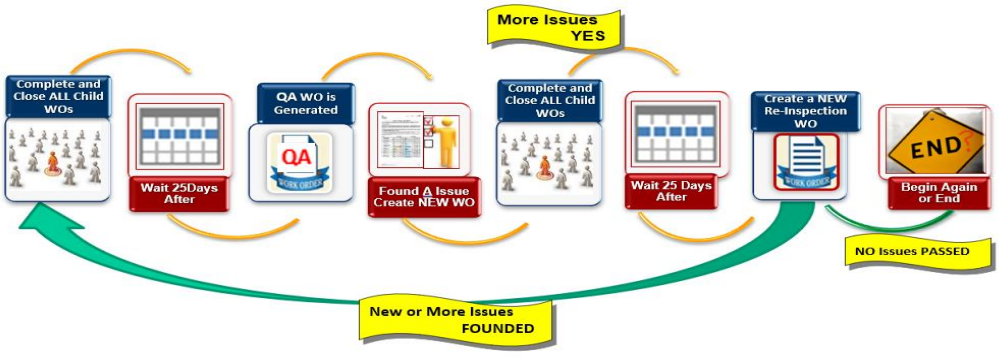
Re-Inspection Workflow

Mold was Found…



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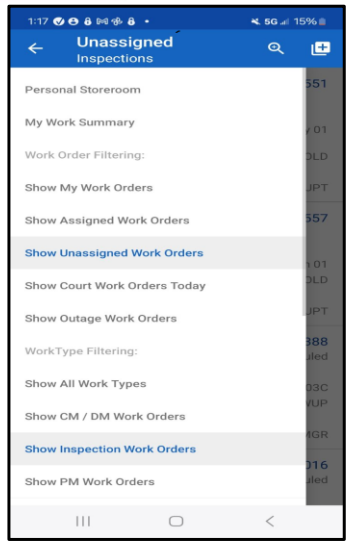
Re - Inspection Workflow

The re-inspection work order is **autogenerated** if you answer **YES** to one of the first 3 questions on the QA **(Evaluation of Conditions)**, e.g. QA has failed.

It is a new parent WO that is auto-related to the QA (and the first original inspection).

The **re-inspection work order** appears in **Show Inspection Work Orders** and **Show CM/DM Work Orders.**



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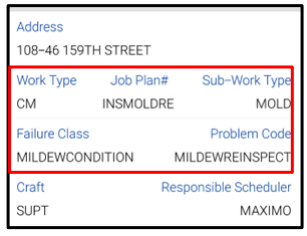
Re-Inspection Work Order Details

The **Work Type** and **Job Plan** have changed - see the screen to the right.

Work Type = CM
Job Plan = INSMOLDRE
Sub-Work Type = MOLD
Failure Class = MILDEWCONDITION
Problem Code = MILDEWREINSPECT

Tap **START WORK TIME**



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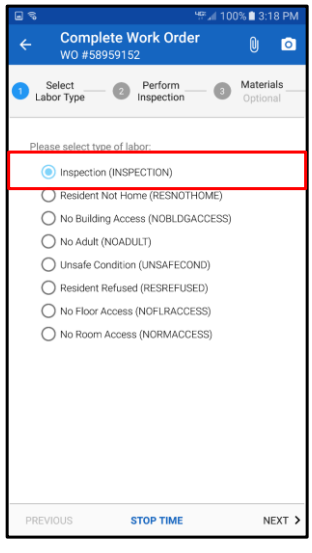
Re-Inspection Work Order Details

After reviewing the **WO Details** the user is now ready to begin the work. **START TIME** is displayed at the bottom of the screen.

Select **Inspection.**

Tap **NEXT.**



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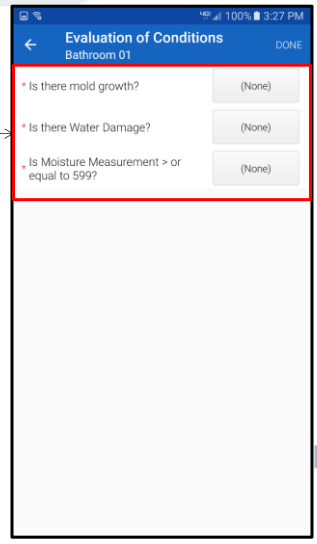
Re-Inspection Work Order Details

1

The **re-inspection** will follow the same logic/rules as the original inspection. If an issue is found, another **QA** will be generated after the **re-inspection** and its children are completed.

A **re-inspection** that is generated from the **QA work order <u>is not</u>** a reoccurrence, as it indicates the original issue/incident was not properly resolved.



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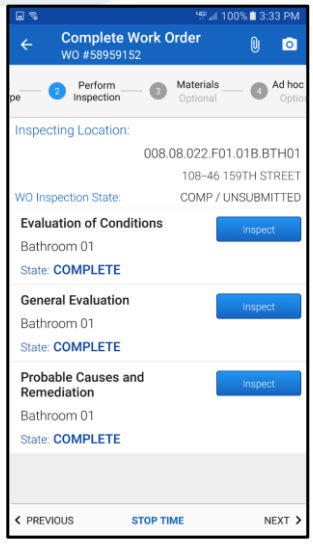
Re-Inspection Work Order Details

Maximo will **<u>auto-generate</u>** new child work orders based on re-inspection results.

The work must be completed on **all** the new child work orders.

Maximo will **<u>auto-generate</u>** a new **QA work order 25-days** after the closure of the last child work order of the reinspection.



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IWM App Practical Exercises

- Mold Re-Inspection Work Orders - CM
  - Kitchen 01
  - Bathroom 01

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Simulation- QA

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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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Non-compliance

- If unsatisfactory work is identified during a quality assurance inspection, 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 the job expectations, accountabilities, and the progressive discipline process.
- Failure to comply with the requirements of the mold standard procedure may result in disciplinary actions.

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Record Keeping

- The IT Business Solutions Technology Department's Maximo Team retains electronically created and stored completed work orders for at least seven years.

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Training Summary

- Your inspection is key to fully fix issues for residents.
- Document what you see to tell the whole story.
- Communicate with residents.

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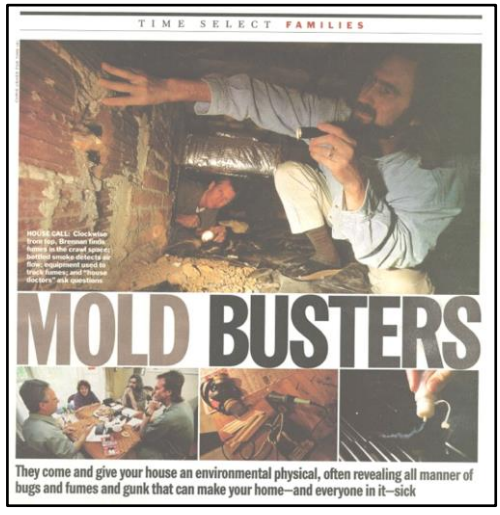
Knowledge Assessment

- See what you've learned!


TIME SELECT FAMILIES

MOLD BUSTERS

They come and give your house an environmental physical, often revealing all manner of bugs and fumes and gunk that can make your home—and everyone in it—sick

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