

NYCHA STANDARD PROCEDURE MANUAL

SP 040:14:1, MOLD/MILDEW CONTROL IN NYCHA RESIDENTIAL BUILDINGS

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		Date: 	 Vito Mustaciuolo General Manager	

I. PURPOSE

This Standard Procedure establishes responsive measures to mold and its root causes in New York City Housing Authority (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.

II. POLICY

It is the policy of NYCHA to establish a cooperative partnership between staff and residents to quickly identify mold and its root causes. NYCHA will promptly remove mold from NYCHA locations and correct the root cause of the mold growth (i.e., the moisture source and/or inadequate ventilation).

III. APPLICABILITY

This Standard Procedure applies to staff responsible for the operation and maintenance of NYCHA public housing developments that receive Section 9 subsidies from the U.S. Department of Housing and Urban Development (HUD). This procedure does not apply to Permanent Affordability Commitment Together (PACT) developments.

IV. INTRODUCTION TO MOLD AND MOISTURE CONTROL

Moisture control is the key to mold control. Mold will often grow in moist or wet indoor areas. Common sites for indoor mold growth include bathroom and kitchen walls and ceilings, cabinet bases and walls beneath sinks, interior surfaces of walls, ceilings below leaks from above or directly below roofs, and areas around windows where moisture condenses. Common sources or causes of water or moisture problems include condensation of shower vapors on bathroom walls and ceilings, condensation in wall cavities from inadequately insulated cold water pipes, leaks from plumbing pipes, roof and façade leaks, and drain backups/overflows.

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The general approach to preventing mold growth in buildings is to keep exterior moisture out of the building, and to control moisture from internal sources. To this end, it is important to establish a cooperative partnership between NYCHA staff and residents so that conditions that require attention are identified and dealt with promptly.

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

Top Ten Things NYCHA Staff Should Know About Mold & Moisture

1. Potential health effects and symptoms associated with exposure to mold and excessive moisture include allergic reactions, asthma, and other respiratory complaints.
2. Mold can be found almost anywhere; it can grow on virtually any substance if moisture is present. For example, there are molds that can grow on sheetrock, painted plaster and concrete, wood, paper, carpet, foods, and even dusty inorganic building materials.
3. There is no practical way to eliminate all mold and mold spores in the indoor environment; the way to control indoor mold growth is to control moisture.
4. If mold is a problem in an apartment or building, we must clean up the mold and eliminate the sources of moisture.
5. Fix the source of the water problem or leak to prevent mold growth, including repairing leaky roofs and façades and restoring adequate exhaust ventilation in bathrooms and kitchens.
6. Reduce indoor humidity (to 30-60%) to decrease potential for mold growth by: venting bathrooms and kitchens; using air conditioners and de-humidifiers; and increasing ventilation. Staff shall ensure that mechanical ventilation is functioning (clear lateral ductwork and operable roof fans). Further, staff can use a hygrometer to check the relative humidity in a resident's apartment.
7. Clean and dry any damp or wet building materials within 24-48 hours to prevent mold growth. Advise residents to clean and dry any damp furnishing and other personal property within 24-48 hours.
8. Clean minor levels of mold off hard surfaces with water and detergent, and dry completely. Absorbent materials, such as sheetrock, that are moldy may 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.

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10. If needed as a result of asthma, individuals with mold and/or excessive moisture in their apartments are entitled to reasonable accommodations from NYCHA.

V. DEFINITIONS

A. Anemometer

An anemometer is an instrument used to measure the air flow or speed of air.

B. Borescope

A borescope is an instrument with a camera used to inspect for leaks or moisture behind a wall through an opening in the wall. It can also be used to observe conditions in other hard to reach places, such as inside an exhaust vent.

C. Complex Repairs

Repairs that need skilled trades or other specialized staff to address and may require multiple visits to the apartment.

D. Craft

The craft is the type of worker (e.g. maintenance worker, painter) assigned to remediate mold and moisture or make other related repairs.

E. Cubic Feet Per Minute (CFM)

CFM is the unit of measure for air flow measurements.

F. HEPA Vacuum

A HEPA vacuum uses a high efficiency particulate air (HEPA) filter that is at least 99.97% efficient in removing microscopic particles, i.e. monodisperse air particles of 0.3 micrometers in diameter.

G. Hygrometer

A hygrometer is an instrument used for measuring the moisture content (i.e. humidity levels) in the air inside an apartment.

H. Independent Data Analyst

An individual or advisory firm who is independently selected and is qualified in forensic data analysis.

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I. Independent Mold Analyst

An individual or advisory firm who is independently selected, is licensed as a mold assessor by the New York State Department of Labor, and is certified as an industrial hygienist by the American Industrial Hygiene Association.

J. Informer Work Management (iWM) App

Informer Work Management is a work order application available on the handheld device.

K. Inspector

An inspector is a property maintenance supervisor or assistant property maintenance supervisor trained and authorized to perform initial inspections and quality assurance inspections using the iWM app on the handheld device. The property manager is also an authorized inspector.

L. Initial Inspection

The process by which NYCHA diagnoses and documents a mold or excessive moisture condition.

M. Large Remediation Job

A large remediation job is the remediation of one hundred (100) or more square feet of mold in a room. Large remediation jobs are performed by lead abatement workers or a certified contractor.

N. Mold

Mold is a fungus that grows on, and sometimes in, damp surfaces and objects. Live spores act like seeds, forming new mold growth (colonies) when they find the right conditions. Mold is most likely to grow where there is water or excessive moisture such as in bathrooms. Mold at NYCHA is measured by the square footage identified in each room.

The term “mildew” is sometimes used to refer to some kinds of mold.

O. Moisture Meter

A moisture meter is an instrument used to measure the subsurface moisture content of a given structure (e.g. walls, ceilings, floors, and components such as kitchen and bathroom cabinets).

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P. Mold Resistant Paint

Mold resistant paint contains a chemical fungicide that discourages the growth of mold on surfaces. There must be no mold present when the paint is applied.

Q. Mold Resistant Sheetrock

Mold resistant sheetrock is paperless sheetrock with a fiberglass face that is designed to discourage the growth of mold.

R. Ombudsperson

An independent, Special Master appointed individual, as described in Section VI of the *Baez et. Al. v. NYCHA Modified Amended Stipulation and Order of Settlement*, who has the authority to investigate mold and excessive moisture complaints and to order appropriate relief.

S. Quality Assurance Inspection

The process by which the inspector confirms that the root cause of mold was effectively addressed, and all child work orders were appropriately completed.

T. Root Cause

The root cause is the fundamental reason for the occurrence of mold, water damage, or moisture. The root cause could be the source of water or excessive moisture (e.g. leaking pipes or fixtures, condensation) or the lack of ventilation (e.g. 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 reoccur.

U. Simple Repairs

Repairs that can be completed by a caretaker or maintenance worker in a single visit to the apartment.

V. Special Master

An individual who was appointed by the U.S. Attorney's Office for the Southern District of New York to investigate NYCHA's failure to comply with the *Baez Consent Decree* and to make recommendations to the Court concerning steps that should be taken to bring NYCHA into compliance.

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W. Wet Measurement

A structure is considered to be wet when the moisture meter measurement is equal to or greater than 599 (on a scale of 0 to 999).

VI. REVIEW CYCLE

Healthy Homes shall review this Standard Procedure at least once every three (3) years; and advise the Compliance Department via email if no changes are needed or submit its revisions to the procedure by submitting *NYCHA Form 022.008, Procedure Development Request*.

VII. RESPONSIBILITIES

A. Office of Mold Assessment & Remediation

The Office of Mold Assessment & Remediation shall:

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

B. Property Management

1. The property management department director shall:
 - a. Monitor key development-level mold-related indicators in Maximo including, but not limited to, scheduled appointments, parent and child mold work order completion time frames, and mold reoccurrence and unfounded inspection rates.
 - b. Assign supervisory staff to perform random inspections at developments, as needed.
2. The regional asset manager shall:
 - a. Monitor development property management operations and hold property managers and property maintenance supervisors accountable for monitoring all mold-related work orders in Maximo and addressing conditions in compliance with protocols established for remediating mold and identifying and correcting root causes.

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- b. Investigate and respond to inspection reports prepared by the Office of Mold Assessment & Remediation.
3. The Property Management Department skilled trades deputy director shall:
 - a. Monitor skilled trades administrators, borough schedulers, and skilled trades supervisors and hold them accountable for monitoring all mold-related work orders in Maximo and addressing conditions in compliance with protocols established for remediating mold and identifying and correcting root causes.
 - b. Respond to recommendations from the Office of Mold Assessment & Remediation.
4. Skilled trades administrators shall schedule skilled trades workers to complete complex repairs within 15 days.
5. The borough scheduler shall:
 - a. Review the Maximo scheduled appointments screen daily.
 - b. Monitor Maximo daily for new parent mold and quality assurance inspection work orders.
 - c. Monitor Maximo for the timely completion of parent and child mold work orders and immediately address delays.
 - d. Ensure immediate scheduling of parent and child work orders to prevent delays.
 - (1) Initial inspections must be scheduled for a date no more than 4 calendar days after the date of the parent work order creation.
 - (2) Schedule child work orders for simple repairs to be completed by Property Management within 7 days.
 - (3) Quality assurance inspections must be scheduled and completed between 30-45 days after the last child work order is closed.
 - e. Assign in Maximo the property maintenance supervisor, assistant property maintenance supervisor, or property manager to work orders to conduct initial and quality assurance inspections.
 - f. Identify and schedule all work orders with the status of Waiting To Schedule (WTSCH) and Failed to Schedule (FAILSCH).
 - g. Reschedule appointments for mold related work orders as needed.
 - h. Coordinate the scheduling of skilled trades workers with the Property Management Department Planning Unit skilled trades administrator; the director of the

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Maintenance, Repair & Skilled Trades Department (MRST); and the Healthy Homes Lead Hazard Control Department Abatement and Clearance Unit.

6. The property manager shall:
 - a. Closely monitor the customer service delivery aspects of this Standard Procedure to ensure NYCHA's commitments to residents are addressed.
 - b. Work closely with the property maintenance supervisor to ensure that property management staff:
 - (1) Visit apartments for all mold work appointments as scheduled.
 - (2) Record resident outreach attempts in the Tenant Data System (TDS)
7. The property maintenance supervisor shall:
 - a. Conduct mold initial inspections and quality assurance inspections using mold-related tools and equipment.
 - b. Work closely with property maintenance staff to ensure that property maintenance staff:
 - (1) Accompany the property maintenance supervisor during initial inspections and quality assurance inspections, as required.
 - (2) Visit apartments for all mold work order appointments as scheduled.
8. The assistant property maintenance supervisor shall perform the tasks in Section 7.a-b directly above in addition to the property maintenance supervisor.

C. Maintenance, Repair & Skilled Trades Department (MRST)

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

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D. Lead Hazard Control Department

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

NOTE:	Once abatement work is complete, Property Management Department staff is responsible for coordinating and scheduling remaining repairs.
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E. Employees Who Remediate or Correct the Root Causes of Mold

Employees shall follow the protocols in Section VIII.C and D, as applicable, when remediating mold and related conditions or correcting probable root causes.

F. All NYCHA Employees Performing Work in Apartments

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

VIII. PROCEDURE

A. Creating and Scheduling Mold Service Requests

1. Creating Parent Mold Work Orders

a. 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 within 4 calendar days of the date of the call.

If the resident is unable to schedule a date within 4 calendar days of the date of the call, the resident is advised that NYCHA will visit the apartment the same day in an attempt to conduct the inspection; and that NYCHA will return to the apartment within 48 hours to reattempt to conduct the inspection and may use its Right of Entry to access the apartment for that purpose. See Section VIII.F, Tenant Not Home Policy.

NOTE:	<ul style="list-style-type: none">When residents are advised in the morning of a business day, the same day means that NYCHA will visit the apartment to attempt to conduct the inspection by that afternoon. When residents are advised in the afternoon of a business day or on weekends or holidays, the same day means that NYCHA will visit the apartment to attempt to conduct the inspection by the morning of the next business day.
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| | <ul style="list-style-type: none">• See Standard Procedure 040:09:6, <i>Customer Contact Center</i> for information on the processing and scheduling of service requests to the CCC |
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b. Resident Service Requests Through the MyNYCHA App

When a resident submits a mold/mildew service request through the MyNYCHA App a parent mold work order is created in Maximo. The resident is required to select a scheduled date for the initial inspection.

If the resident is unable to schedule a date within 4 calendar days of the date of the request, the resident is advised that NYCHA will visit the apartment the same day in an attempt to conduct the inspection; and that NYCHA will return to the apartment within 48 hours to reattempt to conduct the inspection and may use its Right of Entry to access the apartment for that purpose. See Section VIII.F, Tenant Not Home Policy.

c. Property Management Staff Initiates Work Orders

(1) When property management staff or other NYCHA employees view mold conditions in a resident apartment while performing other work or an inspection, they must:

(a) Create a parent mold work order in Maximo using the iWM app on the handheld device; or

(b) Complete and submit a paper Maximo mold work order to the property management office the same day.

(2) 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.

NOTE:	See Standard Procedure 040:09:7, <i>Managing Maintenance Work Orders</i> for definitions of Siebel and Maximo; information on planning, completing, and closing out work orders in the Siebel and Maximo applications; and for the definitions of and relationships between parent and child work orders.
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2. Supervisory Review of All Mold Work Orders

The borough scheduler must review all mold work orders in Maximo at least daily.

a. If an initial inspection generated through a call to the CCC or via the MyNYCHA App is not scheduled, the borough scheduler must assign an inspector to visit the

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apartment that same day to conduct the initial inspection, or issue *NYCHA Form 042.727, 48 Hour Notice of Health and Safety Repairs* to the apartment.

- b. If an initial inspection created by NYCHA staff in Maximo is not scheduled, the borough scheduler must:
 - (1) Contact the resident to schedule the appointment for the initial inspection within 4 calendar days from the parent work order creation date.
 - (2) If the resident is unable to schedule an appointment within 4 calendar days from the parent work order creation date, the borough scheduler must advise the resident that:
 - (a) NYCHA will visit the apartment that same day in an attempt to conduct the inspection; and
 - (b) NYCHA will return to the apartment within 48 hours to reattempt to conduct the inspection and may use its Right of Entry to access the apartment. See Section VIII.F, Tenant Not Home Policy.

NOTE:	<ul style="list-style-type: none">• Initial inspections must be scheduled for a date within 4 calendar days of the creation of the parent mold work order.• All attempts to contact residents must be recorded in the Interview Details (Option 8) in the Tenant Data System (TDS).
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B. Inspecting Mold Conditions in Apartments

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

NOTE:	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 Maximo paper mold inspection work order and immediately enter the results into Maximo following the initial inspection.
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1. Preparing for the Mold Initial Inspection

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

- a. Reviews the Maximo work order history for the apartment to determine if there is a history of mold or moisture complaints.

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- b. Checks the mold inspection tool kit to ensure that the following instruments are in working order: anemometer, hygrometer, and moisture meter.
- c. 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 an anemometer, a borescope and tools appropriate for making wall-breaks, and a HEPA vacuum.
- d. 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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2. Discussing the Mold Condition with the Resident

Upon arriving at the apartment, the inspector:

- a. Makes best efforts to interview an adult listed on the household composition about any history of mold and moisture in the apartment.
- b. Adds the information to the handheld device if there is a history.

3. Conducting the Initial Inspection

The inspector conducts the initial inspection using the handheld device.

a. Inspecting for Mold, Water Damage, and Moisture

The inspector:

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

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The inspector must take multiple measurements of each surface or component and record if a measurement is equal to or greater than 599.

b. General Evaluation of Room Conditions

If a mold, water damage, or moisture (i.e., a wet measurement) condition is found, the inspector must conduct a general evaluation of the room and the opposing common walls in adjoining rooms and common areas.

NOTE:	While the inspector is evaluating the opposing side of common walls in adjoining rooms and common areas, if mold conditions are identified in an adjoining room that are not likely from the same root cause, the inspector shall create a parent mold work order on the handheld device. The inspector should complete this mold work order for the adjoining room at the time of the initial inspection.
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(1) Records the surface structure (e.g. concrete, plaster, sheetrock) and framing structure (e.g. wood, steel) of the room's walls, floor, ceiling, and component(s).

(2) Uses the hygrometer to take a humidity reading of the room and records the humidity level.

(3) If the room is a kitchen or bathroom:

Indicates if there is mechanical ventilation.

(a) If there is mechanical ventilation:

The inspector checks the ventilation by using the anemometer to take an air flow measurement in cubic feet per minute (CFM) and records the result in the handheld device.

i. Maximo automatically generates child work orders:

aa. To clean the horizontal vent ductwork.

ba. To check the roof fan if the CFM is less than 25.

NOTE:	The user must ensure the anemometer is properly calibrated by: i. Entering the correct size of the exhaust duct (i.e. the height and width in inches); and ii. Ensuring that the Free Air Percentage is set to 55%. See 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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(b) If there is a window:

- i. The inspector checks that the window is operating properly and records the result in the handheld device.
- ii. Maximo automatically generates a child work order to repair the window if it is not operating properly.

(4) If the room is a bathroom:

Checks if the toilet base and shower enclosure are caulked and records the results in the handheld device.

- (a) Maximo automatically generates a child work order to caulk the toilet base and/or shower enclosure if they are not caulked.

(5) Visually inspects the room for signs of pest infestation and records the results in the handheld device.

- (a) Maximo automatically generates a child work order for an exterminator when there is evidence of pests.

c. Identifying the Probable Root Cause(s) and Remediation Methods

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

(1) The inspector:

- (a) Selects on the handheld device a probable root cause from the following options:
 - i. Bathtub/shower
 - ii. Caulking
 - iii. Exterior wall (winter)
 - iv. Façade
 - v. Grouting
 - vi. Lack of pipe insulation in wall
 - vii. Leak in apartment above/beside

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- viii. Plumbing – In Unit
- ix. Resident – Cause
- x. Roof
- xi. Shower moisture
- xii. Sink
- xiii. Toilet
- xiv. Toilet bowl/tank needs barrier
- xv. Tub surround

- (b) Selects the ceiling, wall(s), floor, or component(s) identified in Section VIII.B.3.a above 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).
- (c) Indicates if a wall break is required to inspect or correct the probable root cause.
 - i. 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.
 - ii. Maximo will create a work order and 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) <u>and</u> (ii) any work would disturb more than 2 square feet of a painted surface per room, or more than 10 percent of the total surface area on an interior or exterior type of component with a small surface area.
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- (d) If the probable root cause is not Resident – Cause:
 - i. 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.
 - ii. Selects the appropriate craft required to make the repair for each Failure Class/Problem Code selected.

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(e) 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.

(f) Selects the remediation method and craft from a dropdown menu of limited options for the selected wall(s), floor, ceiling, or component(s).

- (2) 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.
- (3) If there are any additional probable root causes, the inspector repeats the steps in Section VIII.B.3.c(1) above for each probable root cause.
- (4) If the inspector is unable to determine the probable root cause of a mold, water damage, or moisture (i.e. wet measurement) condition they must immediately contact the Office of Mold Assessment & Remediation by email at:

mold.busters@nycha.nyc.gov

d. Completing the Initial Inspection

To complete the initial inspection:

- (1) The inspector must take multiple photo(s) of the condition(s) identified, including at least one close-up photo of the condition(s) and at least one photo of the larger area, using the handheld device and upload the photo(s) into the parent work order in Maximo.
- (2) If the condition is unfounded (i.e., there was no mold, water damage, or wet measurement condition identified):

The inspector must take and upload photo(s) of the condition reported by the resident as mold and upload the photo(s) into the parent work order in Maximo.

NOTE:	For clarity, the inspector should record key information obtained during the inspection in the notes field of the iWM app on an unfounded work order.
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4. Reviewing the Work Plan

Upon completion of the initial inspection, the inspector:

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- a. Reviews the child work orders (i.e. the work plan) in the handheld device to confirm the work plan is correct and complete.
 - b. Identifies the outcomes of the inspection on *NYCHA Form 060.845, Mold Inspection Receipt*.
5. Reviewing the Initial Inspection Results with the Resident
- a. When Mold, Water Damage, or a Moisture Condition is Identified

The inspector:

- (1) 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 reoccurrence.
- (2) Gives *NYCHA Form 060.845, Mold Inspection Receipt* to the resident and reviews the following with the resident:
 - (a) The initial inspection outcome (founded or unfounded).
 - (b) The requirement that NYCHA conduct a quality assurance inspection between 30-45 days after all work is completed.
 - (c) The required timeframe for the completion of all work.
 - (d) The name and contact information of the ombudsperson.
- (3) Indicates in the handheld device that both *NYCHA Form 060.303, Controlling Mold in Your Apartment* and *NYCHA Form 060.845, Mold Inspection Receipt* were provided to and discussed with the resident.
- (4) Advises the resident that the property management office will contact them to schedule any additional appointments needed.
- (5) Advises the resident that NYCHA will mail them *NYCHA Form 060.846, Mold Inspection Review* which details the following information:
 - (a) The initial inspection and probable root cause findings.
 - (b) The next step(s) to remediate the mold, excessive moisture, or related condition and correct the root cause.
 - (c) The specific instruction(s) on how to correct the probable root cause if the probable root cause is Resident – Cause.

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NOTE:	See Management Manual, Chapter II, Rent and Rent Collection, Section XV.A and Appendix 8 for details on when and how to make a social service referral to the Family Partnerships Department if there are housekeeping or safety hazards in an apartment.
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- (d) The requirement that NYCHA conduct a quality assurance inspection between 30-45 days after all work is completed.
 - (e) The required timeframe for the completion of all work.
 - (f) The name and contact information of the ombudsperson.
- b. When the Mold Condition is Unfounded

The inspector:

- (1) Discusses the initial inspection findings with the resident.
- (2) 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 reoccurrence.
- (3) Requests that the resident sign the unfounded work order on the handheld device.
- (4) Indicates in the handheld device if the resident refused to sign or if the resident disagrees that the mold condition is unfounded.
- (5) Provides the resident with *NYCHA Form 060.845, Mold Inspection Receipt* including the name and contact information of the ombudsperson.
- (6) Closes the mold work order as Unfounded.
- (7) Provides the name and contact information of the ombudsperson.

NOTE:	If when following the Tenant Not Home Policy in Section VIII.F, NYCHA conducts an initial inspection when a tenant is not home, the inspector must leave the following in the apartment: <i>NYCHA Form 060.303, Controlling Mold in Your Apartment, NYCHA Form 060.845, Mold Inspection Receipt</i> , and a hard copy of the work order.
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C. Remediating Mold and Related Conditions

NOTE:	See Appendix B for a list of HA numbers for ordering specialized tools and supplies.
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1. All remediation work must conform to the protocols in the following documents:
 - a. Standard Procedure 050:20:1, *Lead Safe Housing Procedure*
 - b. Appendix A, Remediation Methods
 - c. *Interim Guidance on Wall Breaks*
 - d. *Interim Guidance on Pipe Insulation*

NOTE:	If cracked or crumbling 9 by 9 vinyl floor tile is present, staff must: <ul style="list-style-type: none">• Cover the exposed area of floor with plastic• Tape all edges securely with duct tape• Instruct the resident not to disturb the covered area• Contact the Technical Services Department's Asbestos Unit for further instructions.
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2. All work must be documented with photographs, including at least one close-up photo of the condition(s) and at least one photo of the larger area.

Employees must take and upload photos of the work into Maximo using the handheld device. Required photos include:

- a. The condition before work is performed.
- b. The condition after work is completed.
- c. Other photos as needed to demonstrate that work behind a surface was completed to standard, e.g. photos of insulated pipes, mold free areas.

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) <u>and</u> (ii) any work would disturb more than 2 square feet of a painted surface per room, or more than 10 percent of the total surface area on an interior or exterior type of component with a small surface area.
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3. Employees must document the materials used in the Materials section of the mold-related child work order including, as applicable, the specific paint (mold resistant or standard) and sheetrock (mold resistant or standard).

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4. Personal Protective Equipment (PPE)

a. Mold Remediation of Less than 100 Square Feet

Employees are recommended to use the following:

- (1) An N95 disposable respirator (i.e., a dust mask) or more protective respirator (such as an N100 disposable respirator) in accordance with the OSHA respiratory protection standard (29 CFR 1910.134)
- (2) Disposable protective clothing covering both head and shoes
- (3) Gloves
- (4) Eye protection

b. Mold Remediation of 100 Square Feet or More (Large Remediation Jobs) Performed by Lead Abatement Workers or Certified Contractors

Employees must use the following:

- (1) 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)
- (2) Disposable protective clothing covering both head and shoes
- (3) Gloves
- (4) Eye protection

NOTE:	Employees using respirators must follow the requirements in <i>SP 001:17:2, Respiratory Protection Safety Program.</i>
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D. Correcting Root Causes

1. Employees must ensure that all repairs to correct root causes:

- a. Are completed to industry standards.
- b. Conform to the protocols in the following documents:
 - (1) Standard Procedure 050:20:1, *Lead Safe Housing Procedure*
 - (2) *Interim Guidance on Wall Breaks*
 - (3) *Interim Guidance on Pipe Insulation*

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(4) *Interim Guidance on Roof Fan Inspections*

- c. Are documented with photographs per the guidelines in Section VIII.C.2. above.

2. Instructions for Specific Tasks

a. Additional Pipe Insulation Instruction

- (1) When performing any wall break including instances where the probable root cause is the lack of pipe insulation in the wall, employees must install or replace pipe insulation in any area inside the wall cavity where the employee determines that the insulation is missing or defective. The employee creating the wall break shall create an opening of sufficient size to allow visibility of all pipes within the wall cavity with assistance of the borescope.
- (2) Lead-safe work practices and RRP certified workers must be used if (i) Maximo identifies that RRP work is required (the apartment is presumed or known to contain lead-based paint) and (ii) any work would disturb more than 2 square feet of a painted surface per room, or more than 10 percent of the total surface area on an interior or exterior type of component with a small surface area.
- (3) If the current insulation in the wall cavity is a suspected asbestos-containing material, then no further work must be conducted, the hole must be sealed with either Masonite or 6 mm poly sheeting and duct tape, and a work order must be created for testing/abatement by the Technical Services Department's Asbestos Unit.

b. Instructions for Cleaning Horizontal Vent Ductwork

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

- (1) 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.
- (2) Must use caution when cleaning the fire damper inside the ductwork.

3. Personal Protective Equipment (PPE)

Employees must use the PPE required to perform their specific task. An employee should refer any questions about the required PPE to their supervisor or contact the Office of Safety and Security at 212-306-8800.

Please refer to the *Personal Protective Equipment (PPE) and Other Safety Equipment Catalogue* for HA numbers and item descriptions. The catalogue is located on the SafeNYCHA webpage on NYCHA Connect/Departments.

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E. Time Frames to Respond to Mold and Related Issues

1. Service Level Goals

- a. Flooding conditions must be abated within 24 hours provided that NYCHA has access to the impacted areas. All standing water relating to the flood must be removed, and water-soaked areas, with the exception of residents' personal property, must be dried within 48 hours. Residents must be advised to clean and dry any damp furnishing and other personal property within 24-48 hours.

- b. Initial Inspection and Child Work Orders

All simple repairs must be completed within 7 calendar days from the date the parent mold work order was created. Complex repairs must be completed within 15 calendar days from the date the parent mold work order was created.

Given this timeframe the initial inspection must be completed within 4 calendar days from the date the parent mold work order was created.

These standards may be reviewed and updated based on performance.

- c. Quality Assurance Inspections

The quality assurance inspection must be completed between 30-45 calendar days after the last child work order has been closed.

F. Tenant Not Home Policy

If the resident or another adult eighteen years of age or older is not home to provide access for a scheduled appointment for a mold inspection or related child work order, or a quality assurance inspection, NYCHA employees must follow the steps in Standard Procedure 040:17:3, *Accessing Public Housing Apartments When Tenant Not Home to Address Deficiencies Related to Leaks, Mold, and Lead-Based Paint*.

G. Reasonable Accommodations

1. If needed as a result of a medical disability or a breathing or respiratory disorder including asthma, residents in apartments with mold and/or excessive and/or uncontrolled moisture conditions are entitled to reasonable accommodations from NYCHA. Such accommodations may include, but are not limited to, the following:
 - a. The right to install and operate an additional air conditioning unit in their apartment if the electrical system permits an additional unit;
 - b. Temporary relocation during mold and moisture remediation;

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- c. Permanent relocation to other NYCHA housing if the apartment is uninhabitable and another apartment is available; and/or
 - d. The use of enhanced dust suppression methods during mold remediation.
2. Property management staff or CCC customer information representatives must check the “reasonable accommodation” flag on the Maximo mold work order or Siebel service request if a resident asks for a reasonable accommodation.
 3. See Standard Procedure 040:12:1, *Reasonable Accommodations in Housing for Applicants, Public Housing Residents, and Section 8 Voucher Holders*, to learn more about the responsibilities of NYCHA staff to review reasonable accommodation requests, and the applicable terms, forms, and policies for reasonable accommodations.

H. Quality Assurance

1. Quality Assurance Inspections

- a. Maximo automatically generates a quality assurance inspection work order twenty-five (25) calendar days after the last child work order is closed for all apartments where a mold, water damage, or moisture (i.e. a wet measurement) condition was identified during the inspection. The target start date is automatically populated as 30 calendar days after the last child work order is closed and the target end date is populated as 45 calendar days after the last child work order is closed.
- b. Once the quality assurance inspection work order is generated, the borough scheduler:
 - (1) Assigns the property maintenance supervisor, assistant property maintenance supervisor, or property manager to conduct the quality assurance inspection; and
 - (2) Ensures that property management staff contacts the resident and schedules the quality assurance inspection to take place between 30-45 calendar days after the last child work order is closed.

NOTE:	<ul style="list-style-type: none">• 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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c. Preparing for the Quality Assurance Inspection

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

- (1) 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 on the quality assurance inspection in case a full new initial inspection is needed.
- (2) 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.
- (3) 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.

d. Conducting the Quality Assurance Inspection

(1) Inspecting for Mold, Water Damage, and Moisture

(a) The inspector:

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

(b) If mold, water damage, or moisture (i.e. a wet measurement) is found during the quality assurance inspection:

- i. The inspector immediately stops the quality assurance inspection and completes and closes the quality assurance inspection work order.
- ii. Maximo automatically generates a new parent mold work order.

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iii. The inspector immediately conducts a full inspection following the steps in Section VIII.B.3-5.

(c) If no mold, water damage, or moisture (i.e. a wet measurement) is found, the inspector continues with the quality assurance inspection.

(2) 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.

NOTE:	The user must ensure the anemometer is properly calibrated by: i. Entering the correct size of the exhaust duct (i.e. the height and width in inches); and ii. Ensuring that the Free Air Percentage is set to 55%. See 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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(3) Confirms that all work (i.e. child work orders) to remediate mold and correct root causes and related conditions was satisfactorily completed.

(a) The inspector:

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

(b) If all work was satisfactorily completed:

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

(c) If any work was not satisfactorily completed:

The inspector:

- i. Immediately creates a child work order in Maximo.
- ii. Takes and uploads a photograph of the unsatisfactory work into Maximo if the work is visible in the apartment.
- iii. Closes the existing quality assurance inspection work order.

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- iv. Follows up with supervisor of the staff person(s) who performed the work to report the unsatisfactory work and ensure the work is completed.

NOTE:	See Section XII, Non-Compliance, for steps to address work that is not performed to standard.
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e. Reviewing the Quality Assurance Inspection with the Resident

(1) Quality Assurance Inspection Complete – All Work Satisfactorily Completed

The inspector:

- (a) Reviews the quality assurance inspection findings with the resident.
- (b) 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.
- (c) Indicates on the handheld device if the resident refuses to sign or is dissatisfied with the work.
- (d) Closes the quality assurance inspection work order.

(2) Additional Work Needed

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

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

2. Performance Reporting

The Office of Mold Assessment and Remediation assigns:

- a. Staff to review reports to identify developments with:
 - (1) High parent mold work order completion time frames.
 - (2) High rates of unfounded mold work orders.
 - (3) High reoccurrence rates for mold work orders.

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- b. Supervisory staff trained in mold inspections to:
 - (1) Visit developments and inspect randomly selected apartments with high rates of unfounded or reoccurring (as applicable) mold work orders.
 - (2) Report findings on the underlying issue, i.e. a building system and/or mold inspection and remediation process issue.
 - (3) Provide follow up recommendations to the regional asset manager.
 - (a) For building system issues, the supervisory staff may, for example, recommend additional repairs.
 - (b) For process issues, the regional asset manager follows up with the property manager and property maintenance supervisor to address the process issue which could include providing additional training, reviewing key accountabilities, or providing progressive discipline.
- c. Staff trained in scheduling mold work orders to:
 - (1) Provide follow up recommendations to the Property Management Department skilled trades deputy director or regional asset manager; or the director of MRST.
 - (a) For building system issues, the Office of Mold Assessment & Remediation staff may, for example, recommend additional repairs.
 - (b) For process issues, recommendations could include providing additional training, reviewing key accountabilities, and/or providing progressive discipline.
 - i. The Property Management Department skilled trades deputy director addresses issues with the borough scheduler, skilled trades administrators, and skilled trades supervisors.
 - ii. The director of MRST addresses issues with MRST skilled trades administrators and MRST skilled trades supervisors.
 - iii. The regional asset manager addresses issues with the property manager and property maintenance supervisor.

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IX. OUTPUTS, REPORTS, AND RECORDKEEPING

A. Outputs

1. Mold in NYCHA apartments is remediated and the root causes are identified and corrected within the allowable timeframes.
2. Mold recurrence (same apartment/same room) is reduced.

B. Reports

Operations reports to be developed with the independent data analyst.

C. Recordkeeping

The IT Business Solutions Technology Department's Maximo Team retains electronically created and stored completed work orders for at least seven (7) years.

X. TRAINING REQUIREMENTS

The Human Resources Department's Learning and Development section in conjunction with Operations shall provide or contract to provide the following training, as applicable. The training shall be provided initially and once every two years thereafter.

A. Inspections

Training on inspection tools and methods as well as conducting and documenting inspections.

B. Building Sciences

Training on identifying the root causes of mold and on the methods to correct the root causes to prevent the reoccurrence of mold.

C. Remediation Methods

Training on how to safely and effectively remediate mold and its root causes.

XI. PERFORMANCE METRICS

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

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XII. NON-COMPLIANCE

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

XIII. FORMS

- A. NYCHA Form 042.727, 48 Hour Notice for Health & Safety Repairs
- B. NYCHA Form 060.303, Controlling Mold in Your Apartment
- C. NYCHA Form 060.845, Mold Inspection Receipt
- D. NYCHA Form 060.846, Mold Inspection Review

XIV. WORKFLOW

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XV. REVIEW/REVISION HISTORY PAGE

MOLD/MILDEW CONTROL IN NYCHA RESIDENTIAL BUILDINGS

SP 040:14:1

Review/ Revision	Review/ Revision Date	Sections Amended
1.	Not applicable -- new Standard Procedure	The Standard Procedure was posted as a draft on the Forms & Reference Library on May 19, 2014. NYCHA staff used the posted draft as agency policy beginning on the effective date of May 21, 2014.
2.	6/3/2015	Banner
3.	6/3/2015	VI, Assessment of Mold/Mildew: The First Staff Visit
4.	12/19/18	Procedure updated and organized into current Standard Procedure format.
5.	12/19/18	Section I, Purpose
6.	12/19/18	Section II, Policy
7.	12/19/18	Section III, Applicability
8.	12/19/18	Added Section IV, Introduction to Mold and Moisture Control
9.	12/19/18	Added Section V, Definitions
10.	12/19/18	Section VI, Review Cycle
11.	12/19/18	Added Section VII, Responsibilities
12.	12/19/18	Added Section VIII, Procedure
13.	12/19/18	Added Section IX, Outputs, Reports, and Recordkeeping
14.	12/19/18	Added Section X, Training Requirements
15.	12/19/18	Added Section XI, Performance Metrics
16.	12/19/18	Added Section XII, Non-Compliance
17.	12/19/18	Section XIII, Forms
18.	12/19/18	Added Section XIV, Workflow
19.	12/19/18	Added Section XV, Review/Revision History Page
20.	12/19/18	Added Section XVI, Appendices
21.	12/19/18	Removed previous appendices A-G
22.	12/19/18	Added Appendix A, Remediation Methods
23.	12/19/18	Added Appendix B, HA Numbers for Mold Related Tools and Supplies
24.	12/19/18	Added Appendix C, Instructions for Using the Anemometer
25.	1/3/19	Section VIII.C, Remediating Mold and Related Conditions
26.	1/3/19	Section VIII.D, Correcting Root Causes
27.	10/17/19	Section VIII.G, Procedure
28.	2/26/20	Banner

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29.	2/26/20	Section II, Policy
30.	2/26/20	Section III, Applicability
31.	2/26/20	Section IV, Introduction to Mold and Moisture Control
32.	2/26/20	Section V, Definitions
33.	2/26/20	Section VI, Review Cycle
34.	2/26/20	Section VII, Responsibilities
35.	2/26/20	Section VIII, Procedure, Subsections A-H
36.	2/26/20	Section IX, Outputs, Reports, and Recordkeeping
37.	2/26/20	Section X, Training Requirements
38.	2/26/20	Section XII, Non-Compliance
39.	2/26/20	Appendix A, Remediation Methods
40.	2/26/20	Appendix B, HA Numbers for Mold Related Tools and Supplies
41.	2/26/20	Appendix C, Instructions for Using the Anemometer
42.		
43.		
44.		
45.		
46.		
47.		

XVI. APPENDICES

Appendix A – Remediation Methods

1. Ceiling: Painted Concrete (Leak or Condensation; All Rooms)

- a. HEPA-vacuum and clean with a detergent solution surfaces displaying water damage, mold growth, and/or that measure wet.
- b. Wet-scrape or wire-brush any loose paint.
- c. Repaint with mold standard paint. In bathrooms and kitchens repaint with mold resistant paint.

2. Ceiling: Sheetrock with Steel Framing (Leak; All Rooms)

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

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

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

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

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

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

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

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

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

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

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

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

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

9. Walls: Sheetrock with Wood Framing (Leak or Condensation; All Rooms)

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

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

- a. Remove and dispose of finished wood floorboards displaying significant water damage (buckling) and/or that measure wet. Continue removal to a point of at least 12 inches

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- beyond any visible mold growth on the top and/or bottom sides of finished wood floorboards, plywood sub-flooring, and/or sleepers or to the perimeter of the room.
- b. If wet, water-damage, and/or mold growth conditions reach the perimeter of a room, evaluate flooring in the adjacent room to determine if additional removal work is necessary.
 - c. Replace flooring.

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

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

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

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

13. Kitchen Cabinetry and Bathroom Vanities (Significant Mold)

- a. Remove and dispose of cabinetry.
- b. Replace cabinetry.

14. Bathtub and Shower Grout or Caulking

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

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

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

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Appendix B – HA Numbers for Mold Related Tools and Supplies

1. Supplies

HA #	Material Item	Material Item Specification	Application
1404922227	Foster 40-50 Paint	5 Gallon Container	Used as per remediation method
1214922226	Plas-tec	4 X 8 Sheet	Provide waterproof barrier behind toilet
1219924836	Heavy Duty Adhesive,	Multipurpose Type for Various Construction Projects, Liquid Nails # LN603	Adhesive for plastic panel
1220991245	White Tub & Tile Sealant Caulking Silicone	10.1 oz Cartridge Packed 24/box G.E. SCS1702	Sealing base of toilets and shower walls
0304920052	Micro Filter	Micro Filter, 10 Quantity Replacement Filters	Used with backpack vacuum
0806938344	Microbiowash		Detergent
080657583	ShockWave		Detergent

2. Tools

HA #	Material Item	Material Item Specification	Application
2016125015	Putty Knife	1-1/4" Stiff Blade	Spread adhesive for plastic panel
2016125020	Putty Knife	1-1/2", Flex Professional Type, Stanley #28241	Spread adhesive for plastic panel
2022922432	V-Notched Trowel	Flat Top for Flooring, 9" X 1/8" X 1/16"	Spread adhesive for plastic panel
2022922431	Roller	3" J-Type, Use for Plastic Laminate	Press plastic panel into adhesive and ensure good bond

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HA #	Material Item	Material Item Specification	Application
2022922433	Drywall Type T Square	48" X 2", Aluminum, Anodized Finish, 5-Rivet Construction, 1 mm Graduations	Assist in cutting plastic panel
2022991858	Plexiglass Cutter	Heavy Duty, Fletcher #05-120	Assist in cutting plastic panel
2006924266	Spiral Saw	6 Amp, 120 Volt, Complete Kit with Zip Mate, Circle Cutter Guide & Dust Vault, Rotozip # SS560VSC-31	Assist in cutting plastic panel
0304920051	HEPA Vacuum Cleaner	1 1/2" Static-Dissipating Vacuum Hose, 50' Extension Cord, Two Intercept Micro Filters, 17" Crevice Tool, 3" Dust Brush w/ Reduce, 5" Upholstery Tool, Xover Floor Tool, 42 to 59" Aluminum Telescoping Wand	Assist in controlling airborne particles
1701920185	Moisture Meter	Rugged construction, large backlit display, pin moisture measurement, non-invasive measurement up to ¾" - 20mm below the surface	Assist in detecting excessive moisture
1701921776	VAC Smart and Wireless Probe Kit	Thermal Anemometer, Vane Anemometer, Thermo-Hygrometers, and Infrared Thermometer	Assist in measuring air velocity, temperature, relative humidity, wet bulb/dew point, and volume flow
1701920186	Vane Anemometer Wireless Smart Probe	Bluetooth Vane Anemometer, 3 AAA Batteries, Certificate of Calibration	Assist in volume-flow measurements and balancing multi-outlet ventilation systems using several instruments
1701920187	Hygrometer Smart and Wireless Probe	Bluetooth Hygrometer, 3 AAA Batteries, Certificate of Calibration	Assist in measuring humidity and temperature
1701920188	Infrared Thermometer	Bluetooth Infrared Thermometer, 3 AAA Batteries, Certificate of Calibration	Assist in non-contact temperature readings from a distance

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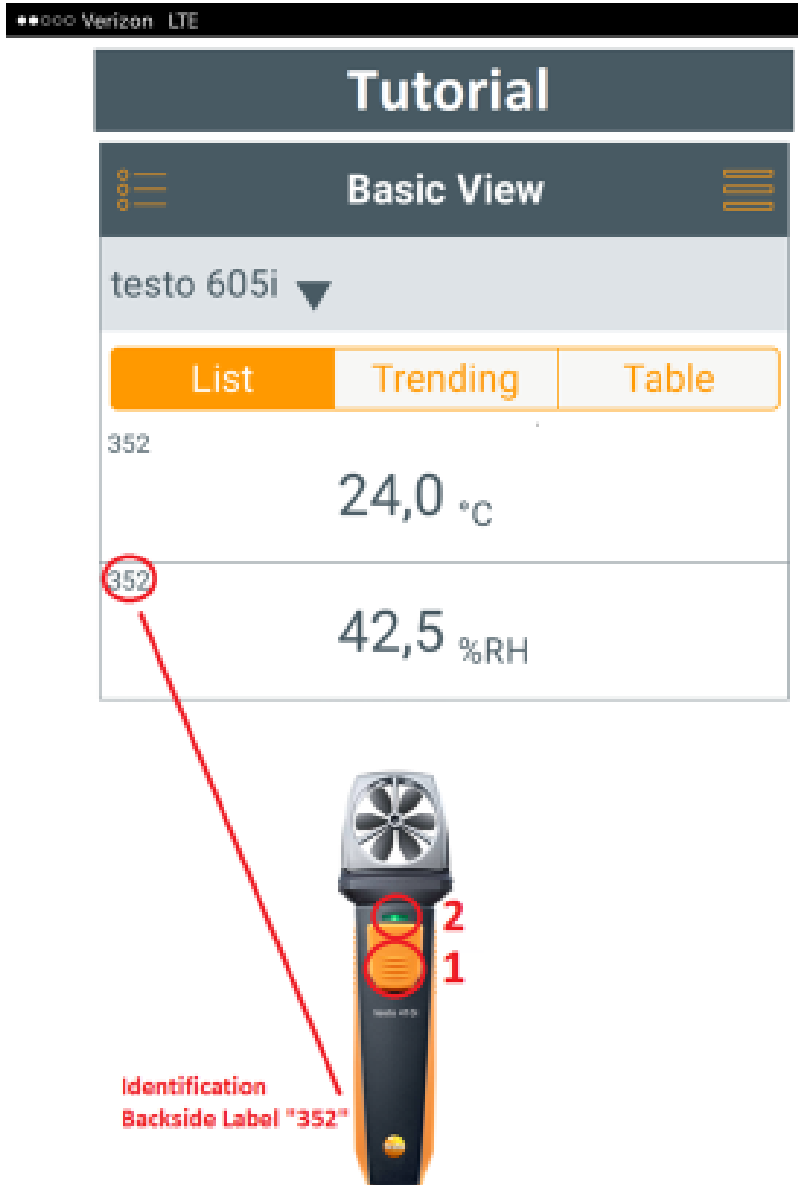
HA #	Material Item	Material Item Specification	Application
2003928503	Seesnake Micro Inspection Camera	Model CA-300 with 3 ft. cable, complete with accessories, Rigid #37888	Record and save still images and videos of problems in hard-to-reach areas

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Appendix C – Instructions for Using the Anemometer

A. Switching On and Off

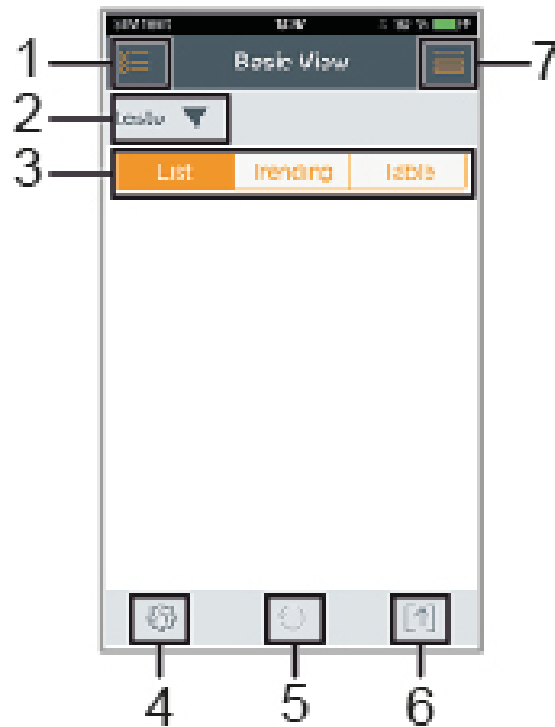
1. Open the Testo App on your NYCHA issued handheld device. Once the Testo App is open, turn on your Anemometer using the instructions below:
 - i. Press the large button shown as number 1 in the image below.
 - ii. The LED light should start blinking yellow.



2. 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: For best results, do not operate more than one Testo device at a time.)**

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B. Overview of the Operating Controls

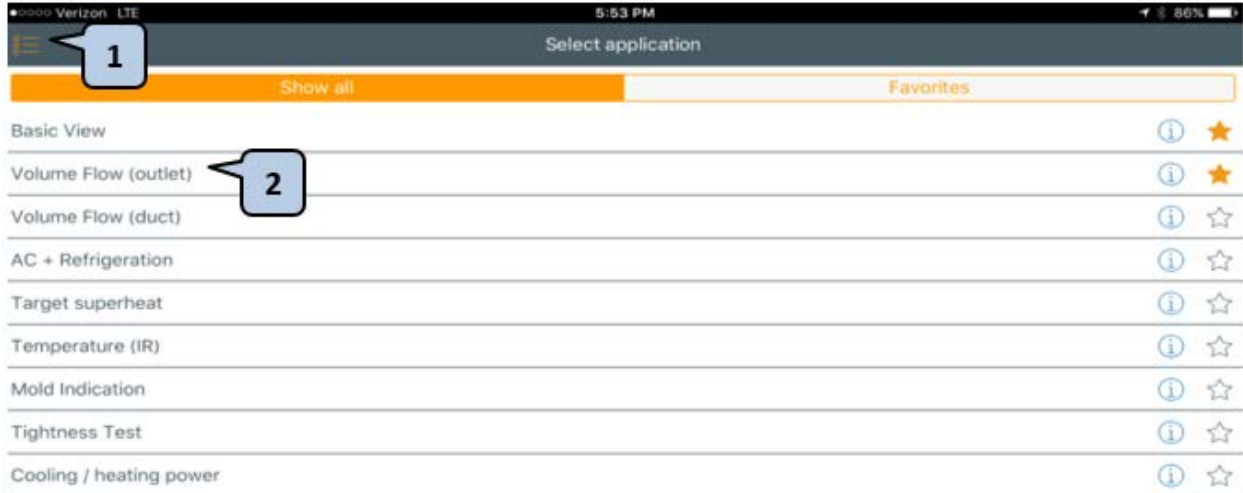


1. Choice of applications
2. Display of connected Smart Probes
3. 3-panel switch between the 3 informational views (list, graphic diagram, table)
4. Measurement settings. (The menu changes depending on which Smart Probe is connected and which particular device is selected)
5. Restarts the measuring value recordings in graph and table format. Allows you to freeze and unfreeze the reading
6. Export the reading
7. Options menu

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C. Configuring the Testo App to Take an Airflow Reading

1. From the Start up Screen, select **Measurement Settings**
2. On the next selection screen, select **Volume Flow (Outlet)**
 - a. Select settings. This selection screen will let you choose your configuration for measurement



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Configuring the Testo App to Take an Airflow Reading (Continued)

1. On the Configure Measurement screen (Pictured Below), choose **Single** measurement
2. Below that setting, there is a setting for either a rectangular or round air duct measurement
 - a. Choose the **Rectangular measurement**
3. Ensure that the length and width in your App is set to inches
 - a. If the unit of measure is not in inches, use the drop-down triangle symbol to change your unit of measure to inches.
4. Input the length and width of the air duct you are measuring
5. Change Free Area to **55%**
6. Ensure the setting for return air is selected
7. Hit **OK** to save your settings.

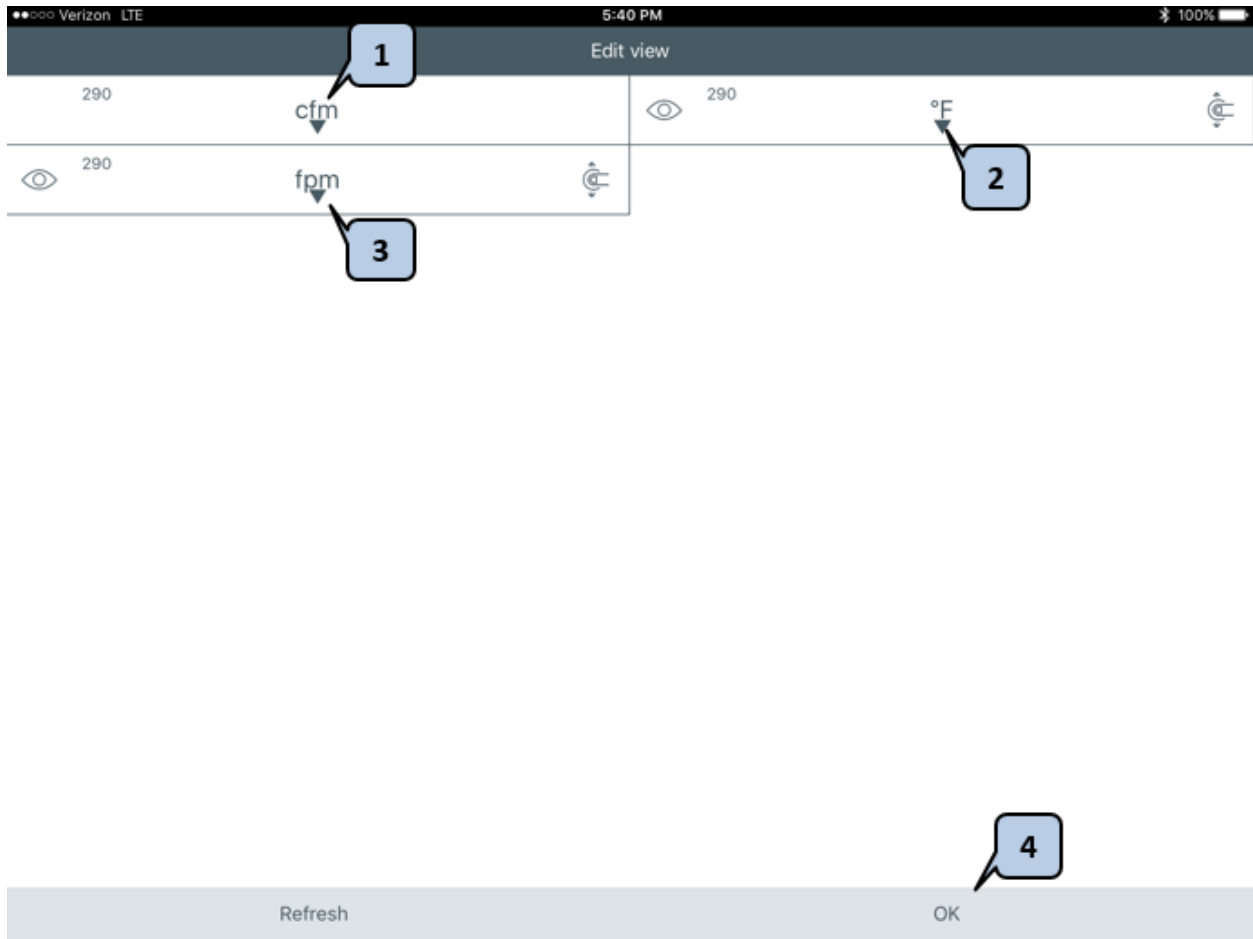
The screenshot shows the 'Configure measurement' screen of the Testo app. The screen is titled 'Configure measurement' and has a status bar at the top showing 'Verizon LTE', '5:40 PM', and '100%' battery. The screen is divided into several sections:

- Measurement Type:** A horizontal bar with three options: 'Single' (selected, highlighted in orange), 'Multi-point avg.', and 'Timed avg.'.
- Duct Shape:** A horizontal bar with two options: 'Rectangular' (selected, highlighted in orange) and 'Round'.
- Length:** A text input field containing '30.0' and a unit dropdown menu currently set to 'cm'. A callout '4' points to the input field, and callout '3' points to the unit dropdown.
- Width:** A text input field containing '40.0' and a unit dropdown menu currently set to 'cm'. Callout '5' points to the input field.
- Free Area:** A text input field containing '100' and a percentage sign. Callout '6' points to the input field.
- Air Type:** A horizontal bar with two options: 'Return air' (selected, highlighted in orange) and 'Supply air'.

At the bottom of the screen, there are two buttons: 'Cancel' and 'OK'.

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- D. In the following screen adjust your units to the following:
1. Change unit of measure to **Cubic Feet per minute (CFM)**
 2. Change temperature units to **Fahrenheit (°F)**
 3. Change unit of measure to **Feet Per Minute (FPM)**
 4. Select **OK** at the bottom of the screen to save your unit selections



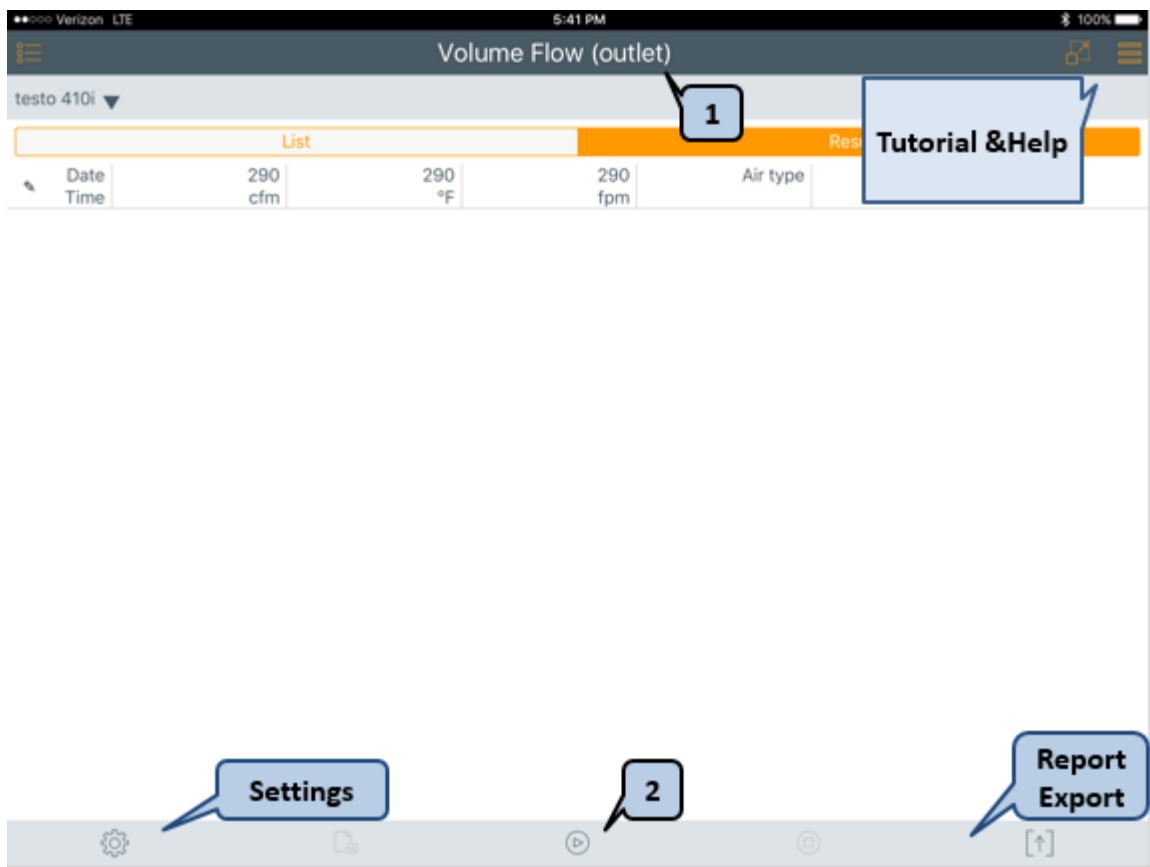
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E. Taking a Flow Measurement

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

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

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



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F. Output Results

To view a table of results:

1. Return to the Main Menu screen
2. Select the **Volume Flow (outlet)**



Below is the **Volume Flow (outlet)** screen:

