

# Quality and Market Standards Checklist Specifications — November 2024

**For informational use by:** Participating Contractors, as a reference guide to understanding the quality assurance scoring criteria, and specific requirements when installing measures in the EmPower+ Program.

NYSERDA maintains the integrity of the EmPower+ Program through an independent quality assurance team, which manages the quality assurance (QA) system. The QA system includes verifying compliance with program and installation standards using comprehensive field inspections. QA field inspections of installations are conducted by a qualified independent third-party competitively selected by NYSERDA and will use these checklists as their guide. Participating Contractors are required to submit proof of all corrective action taken when a specific installation requirement has not been met. The checklist specifications contained in this document are for reference purposes only.

## Field Definitions

**Category** – Represents a specific workscope category that the inspector is reviewing.

**Measure** – Represents a specific component that the inspector is reviewing.

**Task Description** – A detailed description of the task for the inspector to reference in determining if a task should be marked as a non-conformance.

**Non-Conformance Category** – Each task is assigned a non-conformance rating of either incidental, minor, major or critical. Refer to the Non-Conformance Rating Descriptions below for additional detail.

**Reference** – The basis for each task requirement is linked to the project workscope, a program guideline, manufacturer instructions, or code.

Non-Conformance Category Description	Energy Impact	Non-Energy Impact
<b>Incidental</b>	May result in a savings shortfall, but the impact will be small and may not be measurable.	Not expected, on its own, to pose a substantial risk of system failure or hazard.
<b>Minor</b>	Will result in a savings shortfall, but the impact will be small and may not be measurable.	Requires modifications to address but not expected to pose a substantial risk of system failure or hazard.
<b>Major</b>	Will result in a measurable shortfall in energy savings.	Presents an increased risk of system failure or hazard but not determined to be in imminent danger of failure or hazard.
<b>Critical</b>	N/A	Presents an imminent hazard

## Quality Assurance Scoring Matrix

*(Scores are determined by counting the number of non-conformances with the highest severity rating. Applies to the whole project, not each individual measure)*

Score	Incidental	Minor	Major	Critical
<b>5</b>	Up to 3	Up to 2	0	0
<b>4</b>	More than 3	Up to 3	0	0
<b>3</b>	N/A	More than 3	0	0
<b>2</b>	N/A	N/A	Up to 1	0
<b>1</b>	N/A	N/A	More than 1	More than 0

## Quality Assurance Score Descriptions

**5: System Meets All Program Criteria** – An inspection receiving a score of 5 is generally well-installed, with no noticeable defects in workmanship or expected energy output. These projects are examples of best practices.

**3: System Meets Key Program Requirements** – An inspection achieving a score of 3 meets basic Program requirements, but the project may require some modification to be considered fully compliant.

**1: System Does Not Meet Program Requirements** – An inspection receiving a score of 1 indicates a project that has failed to meet key Program requirements and is not expected to meet the expected energy savings. These projects may require urgent attention to address safety concerns.

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## Quality and Market Standards Checklist

Appliances			
Measure	Task Description	Non-Conformance Category	Reference
<b>Dehumidifier</b>	Dehumidifier discharges to an appropriate location.	Minor	NYS RC M1411.3
	Contracted unit installed per manufacturer requirements.	Major	NYHEP Work Order: Funding Allocations, Manufacturer Specifications
<b>Fridge and Freezer</b>	Fridge and Freezer - contracted unit installed per manufacturer requirements.	Major	Manufacturer Specifications
Assessment Quality			
<b>Data Collection</b>	Modeled existing conditions in NYHEP (prior to upgrades) are accurate (insulation amount/R-value).	Incidental	NYHEP Work Order: Funding Allocations
	Heating system nameplate efficiency and age of unit matches contractor's documented numbers.	Minor	NYHEP Workscope Submission
	Customer received the Home Energy Assessment Report.	Incidental	Program Manual Section 5.17

**Assessment Quality (continued)**

Measure	Task Description	Non-Conformance Category	Reference
<b>Recommendations</b>	Smoke detector was proposed in homes not equipped with a smoke detector.	Incidental	Program Manual Section 5.18
	CO detector was proposed in homes not equipped with a CO detector.	Critical	Program Manual Section 5.18
	Air sealing has been recommended where measurable infiltration reduction is achievable and there are no unresolved roadblocks.	Incidental	Program Manual Section 5.18
	Insulation has been recommended where it is cost effective and there are no unresolved roadblocks.	Incidental	Program Manual Section 5.18
	Heating system and/or domestic hot water system have been recommended where the existing system(s) are in poor condition or pose a health risk.	Incidental	Program Manual Section 5.18
	Windows and doors have been evaluated for performance and air sealing, resulting in appropriate recommendations.	Incidental	Program Manual Section 5.18
	Major appliances were recommended for replacement with ENERGY STAR® models where the refrigerator or freezer was manufactured prior to 2011.	Incidental	Program Manual Section 5.15
	Viable direct install/energy reduction measures have been recommended including LED bulbs, low flow shower heads, programmable thermostats, domestic hot water heater pipe insulation and domestic hot water temperature setback.	Incidental	NYHEP Workscope Submission
	Insulating hydronic and steam heating system pipes in unconditioned spaces was recommended unless this measure could cause water pipes to freeze.	Incidental	NYHEP Workscope Submission
<b>Direct Install</b>			
<b>Advanced Power Strip</b>	Contracted advanced power strip(s) have been installed as contracted.	Major	Program Manual Section 5.18
<b>CO &amp; Smoke Detector</b>	Contracted, CO, smoke or combination CO/smoke detector(s) have been installed as contracted.	Critical	NYHEP Work Order: Funding Allocations, Program Manual Section 5.18
	CO, Smoke or combination CO/smoke detector installed per manufacturer specifications.	Incidental	Manufacturer specifications
	CO, Smoke or combination CO/smoke detector powered by battery with 10 year service life.	Incidental	NYS FC 915.4.1.11 Program Manual 5.18
<b>Hot Water Temperature Setback</b>	Hot water temperature is set for 120 degrees F.	Incidental	Program Manual Section 5.18
	Homeowner (non-rental unit) has been instructed how to set temperature.	Incidental	Program Manual Section 5.18

**Direct Install (continued)**

Measure	Task Description	Non-Conformance Category	Reference
<b>LEDs</b>	Contracted quantity of LEDs have been installed.	Major	NYHEP Work Order: Funding Allocations
	Bulbs are Energy Star rated.	Incidental	Program Manual Section 5.15
	Bulbs installed per program LED Installation Guidelines (installed areas, rated for fixture (such as dimmable, etc.)).	Incidental	Program Manual Section 5.18
<b>Low Flow Showerhead</b>	Contracted quantity of low flow shower heads installed.	Major	NYHEP Work Order: Funding Allocations
	Showerhead flow rate meets program requirements (2.5 GPM max).	Incidental	Program Manual Section 5.18
	Connections are leak free.	Incidental	NYS RC P2503.5.2
<b>Pipe Insulation</b>	Contracted quantity of insulation installed on hot water piping.	Major	NYHEP Work Order: Funding Allocations
	Insulation has required clearance from heat sources.	Minor	NYS RC M1803.3.4 (Oil and Solid Fuel), G2427.10.5 (503.10.5) (Gas)
	Pipe insulation is R-3 or greater.	Incidental	NYS RC N1103.5.3 (R403.5.3)
	Insulation is neatly mitered, tight fitting around all fittings and fastened securely.	Incidental	Program Manual Section 5.18
<b>Programmable Thermostat</b>	Contracted quantity installed of programmable thermostats have been installed.	Major	NYHEP Work Order: Funding Allocations
	Thermostat has been programmed.	Incidental	Program Manual Section 5.18

**Electrical**

Measure	Task Description	Non-Conformance Category	Reference
<b>Above-Ground Installation</b>	Wiring properly installed and supported.	Minor	NYS RC E3802.1
	Cables in attics or roof spaces provided with access protected from physical damage (cable height, guard strips, running boards, etc.).	Major	NYS RC E3802.2, E3802.3.1, E3802.3.2
	Insulated conductors and cables used where exposed to direct rays of the sun are listed or listed and marked, as being sunlight resistant, or covered with insulating material, such as tape or sleeving, that is listed or listed and marked as being sunlight resistant.	Major	NYS RC E3802.3.3
	Type NM or SE cables smaller than 8 AWG are run either through bored holes in joists or on running boards when located in unfinished basements or crawl spaces.	Minor	NYS RC E3802.4
	Bends in types NM and SE cable have a radius of 5 times the diameter of the cable, or greater.	Minor	NYS RC E3802.5
	Cables are supported and secured in an approved manner.	Minor	NYS RC E3802.6
	Where portions of a raceway or sleeve are known to be subjected to different temperatures such as passing from the interior to the exterior of a building, the raceway or sleeve has be filled with an approved material to prevent the circulation of warm air to a colder section of the raceway or sleeve.	Incidental	NYS RC E3802.7
<b>Appliance Installation</b>	Appliances and equipment have been installed in accordance with the manufacturer's installation instructions. Electrically heated appliances and equipment shall be installed with the required clearances to combustible materials.	Minor	NYS RC E4101.2
	Each appliance has been protected against overcurrent in accordance with the rating of the appliance and its listing.	Major	NYS RC E4101.4
	Appliances have been provided with a means to disconnect all ungrounded supply conductors. For fixed electric space-heating equipment, means shall be provided to disconnect the heater and any motor controller(s) and supplementary overcurrent-protective devices.	Major	NYS RC E4101.5
<b>Branch Circuits</b>	The branch-circuit for one wall-mounted oven or one counter-mounted cooking unit is sized based on the nameplate rating of the appliance. The branch-circuit for a counter-mounted cooking unit and not more than two wall-mounted ovens all supplied from a single branch circuit and located in the same room is based on the sum of nameplate ratings of the individual appliances.	Major	NYS RC E3702.9
	The ampacity of the conductors supplying multimotor and combination load equipment (air-conditioning and heat pump equipment) are not less than the minimum circuit ampacity marked on the equipment. The branch-circuit overcurrent device rating is the size and type marked on the appliance.	Major	NYS RC E3702.11
	Central heating equipment other than fixed electric space heating are supplied by an individual branch circuit. Permanently connected air-conditioning equipment, and auxiliary equipment directly associated with the central heating equipment such as pumps, motorized valves, humidifiers and electrostatic air cleaners, shall not be prohibited from connecting to the same branch circuit as the central heating equipment.	Minor	NYS RC E3703.1

**Electrical (continued)**

Measure	Task Description	Non-Conformance Category	Reference
<b>Cabinets and Panelboards</b>	Unused openings, other than those intended for the operation of equipment, those intended for mounting purposes, and those permitted as part of the design for listed equipment, are closed to afford protection substantially equivalent to that of the wall of the equipment. Unused openings for circuit breakers and switches are closed using identified closures, or other approved means that provide protection substantially equivalent to the wall of the enclosure.	Minor	NYS RC E3907.5
	Conductors entering cabinets and panelboards are protected from abrasion.	Minor	NYS RC E3907.6
	Cabling is secured to the cabinet, panelboard, cutout box, or meter socket enclosure.	Minor	NYS RC E3907.8
<b>Conductors and Terminal Identification</b>	Insulated grounded conductors are properly identified.	Incidental	NYS RC E3407.1
	Equipment grounding conductors are properly identified.	Incidental	NYS RC E3407.2
<b>Electrical Conductors and Connections</b>	Conductors are appropriately sized for expected current load.	Critical	NYS RC E3406.3, 3603.1, 3603.1.1, 3603.1.2, 3603.1.3, 3603.1.4, 3603.1.5, E3602.2
	All conductors of the same circuit shall be contained within the same raceway.	Minor	NYS RC E3406.7
	Conductors in raceways are continuous between outlets, boxes, and devices and shall be without splices or taps in the raceway.	Major	NYS RC E3406.11.1
	Grounded conductors are connected to terminals specifically intended for grounded connections. The continuity of a grounded conductor shall not depend on connection to a metallic enclosure, raceway or cable armor.	Major	NYS RC E3406.13
	Equipment grounding conductors, grounding electrode conductors and bonding jumpers are properly connected.	Major	NYS RC E3406.14
	Conductors of dissimilar metals have not been joined in a terminal or splicing connector where physical contact occurs between dissimilar conductors such as copper and aluminum, copper and copper-clad aluminum, or aluminum and copper-clad aluminum, except where the device is listed for the purpose and conditions of application.	Minor	NYS RC E3406.8
<b>General Requirements</b>	Enclosure is suitable for environment.	Major	NYS RC E3404.4
	Unused openings of electrical equipment shall be properly sealed.	Minor	NYS RC E3404.6
	Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling.	Major	NYS RC E3404.8
	Each disconnecting means are legibly marked to indicate its purpose, except where located and arranged so that the purpose is evident. The marking has the durability to withstand the environment involved.	Incidental	NYS RC E3404.13

**Electrical (continued)**

Measure	Task Description	Non-Conformance Category	Reference
<b>Grounding</b>	Metal enclosures of conductors, devices and equipment are connected to the equipment grounding conductor.	Major	NYS RC E3908.1
	Grounded conductors are not connected to normally noncurrent-carrying metal parts of equipment, to equipment grounding conductor(s), or reconnected to ground on the load side of the service disconnecting means.	Major	NYS RC E3908.6
	Grounded circuit conductors have not been used for grounding noncurrent-carrying metal parts of equipment on the load side of the service disconnecting means.	Major	NYS RC E3908.7
	Equipment grounding conductor run with or enclosing circuit conductors per NYS RC E3908.8.	Major	NYS RC E3908.8
<b>Grounding Electrode System</b>	All electrodes within a building are properly bonded together to form the grounding electrode system.	Major	NYS RC E3608.1, E3608.2
	When a metal water pipe is used as a grounding electrode, there must be a ground jumper present across water meter/filter and is supplemented by an additional electrode.	Major	NYS RC E3608.1.1.2, E3608.4
	The upper end of the grounding electrodes are flush with or below ground level except where the above-ground end and the grounding electrode conductor attachment are protected against physical damage.	Major	NYS RC E3608.1.4.1
	Grounding electrodes are made of approved material.	Major	NYS RC E3608.1.4, E3608.5
	Metal underground gas piping system has not be used as a grounding electrode.	Critical	NYS RC E3608.6
<b>Grounding Electrode System (continued)</b>	Grounding electrode conductor is properly bonded to the main premises grounding electrode system.	Major	NYS RC E3609
	Grounding electrode conductor is continuous.	Major	NYS RC E3610.1, E3610.3, E3611.1
	Grounding electrode conductor is sufficiently sized.	Major	NYS RC E3603.4
<b>Listed and Labeled</b>	Electrical materials, components, devices, fixtures and equipment are listed for the application, bear the label of an approved agency and installed to the manufacturer's specifications.	Minor	NYS RC E3403.3
<b>Panelboards</b>	Circuit directory is complete and located on the face of the panelboard enclosure or inside the pane door.	Incidental	NYS RC E3706.2
	Each grounded conductor is terminated within the panelboard on an individual terminal that is not also used for another conductor, except that grounded conductors of circuits with parallel conductors shall be permitted to terminate on a single terminal where the terminal is identified for connection of more than one conductor.	Major	NYS RC E3706.4

**Electrical (continued)**

Measure	Task Description	Non-Conformance Category	Reference
<b>Power Distribution</b>	Appliance receptacle outlets installed for specific appliances, such as laundry equipment, have be installed within 6 feet of the intended location of the appliance.	Incidental	NYS RC E3901.5
	125-volt, single-phase, 15- and 20-ampere receptacles installed in laundry areas have ground-fault circuit-interrupter protection.	Major	NYS RC E3902.9
	Conductors entering boxes, conduit bodies or fittings are protected from abrasion.	Minor	NYS RC E3906.1
	Unused openings other than those intended for the operation of equipment, those intended for mounting purposes, or those permitted as part of the design for listed equipment, are closed to afford protection substantially equivalent to that of the wall of the equipment.	Minor	NYS RC E3906.4
	Covers and plates are nonmetallic or metal, metal covers and plates are grounded.	Major	NYS RC E3906.10
<b>Service</b>	Means have be provided to disconnect all conductors in a building or other structure from the service entrance conductors.	Major	NYS RC E3601.6
	Service disconnects are permanently marked as a service disconnect.	Incidental	NYS RC E3601.6.1
	Service OCPD is properly sized.	Major	NYS RC E3602.3, E3602.2, E3602.1, E3603.3
	Service is three wire, 120/240 volt, single phase with a grounded neutral.	Major	NYS RC E3602.4
<b>Service Entrance Conductors</b>	Service entrance cables are protected from physical damage.	Major	NYS RC E3605.5
	Service entrance insulated conductors and cables that are exposed to direct sunlight are protected.	Minor	NYS RC E3605.6
	Service entrance cables are properly supported.	Minor	NYS RC E3605.7
	Service entrance cables are properly secured in place.	Minor	NYS RC E3605.9.7
<b>Structure Protection</b>	Wood-framed structural members have been drilled, notched or altered properly.	Major	NYS RC R502.8, R602.6, E3402.1
	Penetrations of fire-resistance-rated assemblies, firestops and draft stops have been protected properly.	Minor	NYS RC R302.4, E3402.2, E3402.3
<b>System Grounding</b>	The wiring system is properly grounded at the service with a grounding electrode conductor connected to a grounding electrode system.	Major	NYS RC E3607.1, E3607.2
	Equipment grounding conductor properly installed.	Major	NYS RC E3607.3.1, E3607.3.2, E3607.6, E3908.12
	The grounding electrode conductor is properly connected to equipment grounding conductors, service equipment enclosures, and the grounded service conductor to the grounding electrode(s).	Major	NYS RC E3607.4
	An unspliced main bonding jumper is properly installed connecting the equipment grounding conductor(s) and the service-disconnect enclosure to the grounded conductor of the system within the enclosure for each service disconnect.	Major	NYS RC E3607.5



**Electrical (continued)**

Measure	Task Description	Non-Conformance Category	Reference
<b>Wiring Methods</b>	Wiring methods and applications are acceptable.	Minor	NYS RC E3801.2, E3801.4
	All conductors of a circuit, including equipment grounding conductors and bonding conductors, are contained in the same raceway, trench, cable or cord.	Minor	NYS RC E3801.3
<b>Health and Safety</b>			
<b>Roadblocks</b>	Blower door depressurization tests were not performed in homes where there is a risk of PACM becoming airborne and being drawn into the dwelling.	Major	BPI Technical Standards for the Envelope Professional
	Insulation has not been installed in areas where live knob and tube wiring exists.	Major	Program Manual Section 5.18, BPI Technical Standards for the Envelope Professional
	Moisture sources have been mitigated through elimination of the source, isolation of the source, or ventilation of the space around the source.	Major	BPI Technical Standards for the Envelope Professional
	Clothes dryers, regardless of fuel type, and bathroom exhaust fans must be vented directly outside using appropriate duct materials.	Major	BPI Technical Standards for the Envelope Professional
	Vapor barrier has been installed on exposed dirt floors per program requirements.	Major	Program Manual Section 5.18
<b>Testing Inspection</b>	Gas Leak Testing - Pre-Existing Lines - Indoor ambient air sampled at each floor of the home with a Combustion Gas Detector has a LEL of 0%. When LEL is above 0%, gas leak testing performed on all gas piping and leaks tagged and photo documented.	Minor	Program Manual Section 5.17, ANSI/BPI-1100-T Section 7.3
	Gas Leak Testing - Contractor Installed Lines - Gas leak testing performed on all gas lines and combustion appliances. All gas leaks shall be tagged and photo documented.	Major	Program Manual Section 5.17, ANSI/BPI-1100-T Section 7.3
	Combustion appliances pass spillage assessment under greatest depressurization achievable.	Major	ANSI/BPI-1100-T Section 7.7
	Combustion appliance CO is below threshold limit under greatest depressurization achievable.	Major	ANSI/BPI-1200 Section 7.9.5
	Ambient CO throughout the building, including utility rooms, is below 9 ppm.	Major	ANSI/BPI-1200 Section 7.3.3
	Gas piping system has no open fittings or ends and all valves at unused outlets are plugged or capped.	Critical	NYS RC G2415.15 (404.15)
	Oil supply system is leak free.	Minor	Program Manual Section 5.18, ANSI/BPI-1100-T Section 7.4
CAZ and appliance related safety issues including, detached or corroded flue pipes, problems with flue/vent size or pitch, heat exchanger integrity, unvented heaters are not ANSI Z21.11.2 listed.	Critical	Program Manual Section 5.18, ANSI/BPI-1100-T Section 7.5	

## Heating and Cooling

Measure	Task Description	Non-Conformance Category	Reference
<b>Clean and Tune</b>	Heating appliance cleaned and tuned as contracted.	Major	NYHEP Work Order: Funding Allocations
<b>Ductwork</b>	Duct to duct and duct to equipment connections are mechanically fastened and sealed with appropriate material.	Minor	NYS RC M1601.4.1
	Ducts in semi or unconditioned space must be insulated to the minimum R-value.	Minor	NYS RC N1103.3.1 (R403.3.1)
	Contracted ductwork has been installed.	Major	NYHEP Work Order: Funding Allocations
	Ducts are supported at the proper intervals.	Incidental	NYS RC M1601.4.4
	Duct return opening has not been installed in CAZ.	Major	NYS RC M1602.2.4
	Contracted amount of insulation was installed and meets or exceeds the specified R-value.	Major	NYHEP Work Order: Funding Allocations
	Duct sealing in accessible areas was completed as contracted.	Minor	NYHEP Work Order: Funding Allocations
	None of the contracted duct sealing was completed.	Major	NYHEP Work Order: Funding Allocations
	Duct sealing materials are UL181B or UL181A listed.	Incidental	NYS RC M1601.4.1
	Filter slot cover has been installed as specified.	Incidental	NYHEP Work Order: Funding Allocations, BPI Technical Standards for the Heating Professional
<b>Exhaust Fan</b>	Contracted exhaust fan(s) installed.	Major	NYHEP Work Order: Funding Allocations
	Exhaust fans vent to the exterior of the structure.	Major	NYS RC M1501.1, BPI Technical Standards for the Envelope Professional
<b>HVAC Equipment</b>	A readily accessible disconnect is installed within sight from the heat pump outdoor unit.	Major	NYS RC E4101.5
	Exterior pipe insulation is UV resistant and/or has a UV resistant covering.	Incidental	NYS RC N1103.4.1 (R403.4.1)
	Exterior pipe penetrations are sealed weather tight (where visible) and resistant to rodents.	Minor	NYS RC P2606.1, P2607.2
	Exterior units installed under a roof line/edge must have a rain/snow/ice shield as specified by the Manufacturer.	Minor	NEEP guide to installing air-source heat pumps in cold climates. NYS RC M1301.1, MC 303.4
	Heat pump outdoor unit installed above expected snow line.	Minor	NEEP guide to installing air-source heat pumps in cold climates, Program Manual Section 5.10

**Heating and Cooling (continued)**

Measure	Task Description	Non-Conformance Category	Reference
<b>HVAC Equipment (continued)</b>	Heat pumps with supplementary electric resistance heat shall have required controls that, except during defrost, prevent supplemental heat operation while the heat pump compressor can meet the heating load.	Major	NYS RC N1103.1.2 (R403.1.2)
	Interior and exterior unit is level and properly supported/anchored.	Minor	NYS RC M1401.4, M1305.1.3.1, M1307.2
	Pipe supports and support spacing, where visible, conform to the code and manufacturer instructions; piping and piping supports appear to be securely installed.	Minor	NYS MC 305.3, 305.4
	Piping insulation is installed per the manufacturer's specifications, meets the correct thickness, and is code compliant.	Minor	NYS RC M1411.6
	Projects where a heat pump has been installed, the existing whole house fossil fuel heating system has been disabled or removed and decommissioned per program requirements.	Minor	Program Manual Section 5.10 and Section 8 Decommissioning Checklist
	Refrigerant leak detector yields no leaks in the accessible fittings.	Major	NYS RC M1301.1, MC 1108.1
	The refrigerant pipe sizing, height change, and line length meets manufacturer requirements.	Major	Manufacturer Specifications
	Vent/flue connector has proper clearance to combustibles.	Major	ANSI/BPI-1200 Section 7.7.2
	Interior wall mounted units installed with adequate clearance from ceiling. The minimum top clearance as required by manufacturers specifications, when feasible units shall be installed with additional clearance (6" minimum from ceiling) for ceiling heights up to 8'; rooms with higher or vaulted ceilings units are installed with the air discharge no higher than 8' from the floor.	Minor	NEEP guide to installing air-source heat pumps in cold climates. NYS RC M1301.1, MC 303.4
	Contracted equipment was installed and the efficiency rating matches or exceeds the contract.	Major	NYHEP Work Order: Funding Allocations
	Air filter is accessible and is not compromised when replaced.	Incidental	NYS RC M1401.2
	Maintenance access is accessible.	Minor	NYS RC M1401.2
	Condensate drain is installed properly and discharges with air gap or other approved place of disposal.	Major	NYS RC M1411.3
	Airflow through duct system must meet manufacturer's specifications to provide the design airflow.	Major	Manufacturer specifications
	Replaced equipment has been removed from the home when included in the contract.	Incidental	Contract/EmCalc
	Ancillary equipment related to the installed appliance has been installed as contracted.	Incidental	NYHEP Work Order: Funding Allocations
Equipment has been installed with clearances in accordance with their listing, label and manufacturer's instructions.	Major	NYS RC M1401.1, M1402.2, M2001.2	

**Heating and Cooling (continued)**

Measure	Task Description	Non-Conformance Category	Reference
<b>HVAC Equipment (continued)</b>	Vent/flue system is properly sized and pitched.	Minor	NYS RC M1801.3.1, M1803.3
	CSST gas piping is properly bonded/grounded.	Major	NYS RC G2411.2
	Gas piping properly sized.	Major	NYS RC G2413.3
	Temperature & pressure relief valve installed.	Major	NYS RC M2002.4, P2804.1
	Temperature & pressure relief valve discharge tube installed to proper specifications.	Minor	NYS RC M2002.4, P2804.6.1
	Fuel oil piping is leak-free and sized to provide adequate oil supply to all connected appliances.	Major	Manufacturer Specifications
	OEM manual left with the installed unit.	Incidental	Program Manual Section 5.18
	Contractor installed water piping is leak free.	Minor	NYS RC P2503.7
	Air filter installed as contracted.	Minor	NYHEP Work Order: Funding Allocations
<b>Leakage Testing</b>			
<b>Blower Door Testing</b>	Blower door test-in and test-out results were submitted.	Incidental	Program Manual Section 5.18
	Blower door results are within 10% of test out.	Minor	NYHEP Work Order: Funding Allocations
	Test-out results are above 70% of Building Airflow Standard (BAS), or mechanical ventilation has been installed to achieve the BAS.	Major	BPI Technical Standards for the Envelope Professional
<b>Plumbing</b>			
<b>Hot Water Heater</b>	Vent/flue system has proper clearance to combustibles.	Major	ANSI/BPI-1200 Section 7.7.2
	Contracted equipment was installed and the efficiency rating matches or exceeds the contract.	Major	NYHEP Work Order: Funding Allocations
	Hot water heater installed in location meeting the manufacturer specifications.	Major	Manufacturer Specifications
	The old hot water heater has been removed, unless the contract specifies otherwise.	Incidental	NYHEP Work Order: Funding Allocations
	Temperature and pressure relief valve installed.	Major	NYS RC P2804
	Temperature and pressure relief valve discharge tube installed to proper specifications.	Minor	NYS RC P2804
	Drain pan has been installed when water heater is located where leaks could cause damage. The pan must have a discharge tube to an appropriate drain.	Minor	NYS RC P2801.6

**Plumbing**

Measure	Task Description	Non-Conformance Category	Reference
<b>Hot Water Heater (continued)</b>	Vent/flue system is properly sized and pitched.	Minor	NYS RC M1801.3.1, M1803.3
	Contractor installed water piping is leak free.	Minor	NYS RC P2906.8
<b>Well Pump Repair</b>	Contracted repairs to well pump completed.	Major	NYHEP Work Order: Funding Allocations
	Well pump cycles on/off based on demand/pressure, does not run continuously.	Minor	NYHEP Work Order: Funding Allocations

**Shell Measures**

<b>Air Sealing</b>	All items stated in contract have been sealed (top plates, knee wall transition, plumbing and wiring penetrations, drop ceilings, soffits, chases, bath fan housings, windows, doors, recessed fixtures, air register boots, interior sheathing voids repaired, etc.).	Major	NYHEP Work Order: Funding Allocations
	Bypasses around chimneys, vents and flues have been air sealed using non-combustible materials.	Major	NYS RC R1003.18, M1801.3.4, G2427.7, G2427.8, G2427.10.5, BPI Technical Standards for the Envelope Professional
	Non insulation contact fixtures air sealed with rigid enclosure to provide space between fixture and insulation.	Major	BPI Technical Standards for the Envelope Professional
	Attic and/or basement access, if contracted, is sealed using permanently mounted weather stripping and the access is secured with metal fastenings.	Minor	NYS RC N1102.2.4 (R402.2.4), Program Requirement Section 5.18, BPI Technical Standards for the Envelope Professional
	IR scans indicate little to no air leakage pathways.	Major	NYHEP Work Order: Funding Allocations
	Contracted weather stripping installed on exterior doors.	Minor	NYHEP Work Order: Funding Allocations
	Air leakage paths between attached or tuck-under garages and the living space have been sealed.	Major	BPI Technical Standards for the Envelope Professional
	Contracted weather stripping installed on windows.	Minor	NYHEP Work Order: Funding Allocations

**Shell Measures (continued)**

Measure	Task Description	Non-Conformance Category	Reference
<b>Insulation</b>	Air sealing and insulation have been installed to align the thermal and pressure boundaries to create a single continuous thermal envelope.	Major	NYS RC N1102.4 (R402.4), BPI Technical Standards for the Envelope Professional
	Insulation R-value and quantity installed matches contract	Major	NYHEP Work Order: Funding Allocations
	Installed insulation type matches the contract or provides equal performance to contracted material(s).	Major	NYHEP Work Order: Funding Allocations
	Loose fill insulation must be installed according to manufacturer's specifications and installed to a level condition.	Minor	Manufacturer Specifications
	Insulation has been dammed to maintain minimum clearances to heat sources such as chimneys, flues, recessed lights or bath fans with heat lamps.	Major	BPI Technical Standards for the Envelope Professional
	Insulation is dammed to allow maintenance access and manufacturer required clearances. Damming installed to prevent intrusion of insulation into whole house fans, condensate pans, etc.	Major	NYS RC R1003.18, M1801.3.4, M1803.3.4, G2427.7.7, G2427.7.8, G2427.10.5, BPI Technical Standards for the Envelope Professional
	Attic access is insulated to R-14 or greater.	Minor	BPI Technical Standards for the Envelope Professional
	Blocking/baffles have been installed at each soffit vent to ensure appropriate air flow to roof, protect insulation from wind-washing and restrain loose-fill insulation from congesting the soffit vents.	Minor	NYS RC N1102.2.3 (R402.2.3), BPI Technical Standards for the Envelope Professional
	Insulation is contained using a permanent damming around storage areas, hatches and pulldown stairs.	Incidental	NYS RC N1102.2.4 (R402.2.4)
	Sufficient roof ventilation has been provided.	Major	NYS RC R806
	Dense packed insulation has been installed to a density of 3.5 lbs./cu. ft. for cellulose and 2.2 lbs./cu. ft. for blown fiber that is manufactured for dense pack installation.	Minor	BPI Technical Standards for the Envelope Professional
	Insulation protected from wind washing (kneewalls, underside of floor framing in vented crawl space, etc.)	Minor	BPI Technical Standards for the Envelope Professional
	Vapor retarder is against the building surface exposed to warmer conditions for the majority of the year.	Incidental	NYS RC R702.7
	Seams in rigid board Insulation are sealed when installed against the foundation wall, the insulation is secured to the wall and the insulation and air barrier material used on the rim/band areas must be connected to the insulation and air barrier used on the foundation wall.	Incidental	NYS RC N1102.4 (R402.4), BPI Technical Standards for the Envelope Professional

**Shell Measures (continued)**

Measure	Task Description	Non-Conformance Category	Reference
<b>Insulation (continued)</b>	Exposed rigid foam board or spray foam has required thermal and ignition barrier.	Major	NYS RC R316.4, R316.5.11, Program Requirement Section 5.15
	Densepack insulation drill holes have been plugged, drainage plane repaired and the exterior finish has been securely reinstalled.	Minor	Program Manual Section 5.18
	Pre and post photos of attic insulation have been provided on the portal where temporary access was created and sealed closed.	Minor	Program Manual Section 5.18
<b>Replacement Doors &amp; Windows</b>	Contracted replacement windows and doors have been installed.	Major	NYHEP Work Order: Funding Allocations

