

PHOTO INSPECTION REFERENCE – 2014 NEC

NY-Sun



The photo inspection resource is used by NY-Sun’s third-party QA Contractor to evaluate the quality of the solar electric installation. NY-Sun approved builders are encouraged to reference this resource throughout the installation process for each project to ensure compliance with the NY-Sun Program rules and requirements.

		Requirement	Defect Category	Code Reference
Overall Observation	Program	PV Modules are UL Listed per NY Sun program requirements.	Minor	NY-Sun Program
		Existing Service Panel is not a split bus (FPE Stab-Lok, Push-O-Matic etc.,).	Critical	NY-Sun Program
		Array Module Manufacturer must match application.	Incidental	NY-Sun Program
		Array Module Number matches application.	Incidental	NY-Sun Program
		Array Module Quantity matches application.	Incidental	NY-Sun Program
		Installed Battery manufacturer shall match Program records.	Incidental	NY-Sun Program
		Installed Battery model number shall match Program records.	Incidental	NY-Sun Program
		Installed Battery quantity shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter manufacturer shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter quantity shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter model number shall match Program records.	Incidental	NY-Sun Program
		As per Program requirements, any roof damage must be repaired prior to installation.	Minor	NY-Sun Program
		Site address must match site address submitted.	Critical	NY-Sun Program
		Current Transformers are installed and meet Program requirements.	Major	NY-Sun Program

		Requirement	Defect Category	Code Reference
AC Combiner	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surfaces and the ground terminal inside combiner box.	Major	NEC Article 250.24(A)(5)
		The neutral conductor is connected at its own dedicated terminal isolated from metal enclosure.	Minor	NEC Article 408.41
	Electrical	AC Combiner is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
	Grounding	Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor is continuous.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		AC Combiner is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	OCPD	AC Combiner Overcurrent protection is sufficient.	Critical	NEC Article 240.4 and 690.9
		PV Backfed breaker is properly sized at, or above 125% of inverter output current	Major	NEC Article 240.4 and 690.9
		The AC OCPD is properly sized for the expected output current of the PV system.	Major	NEC Article 690.9
		Circuit Breaker shall be installed and used in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		PV source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.	Critical	NEC Articles 690.9 and 690.35(B)

		Requirement	Defect Category	Code Reference
AC Disconnect	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductors are isolated from enclosure and ground terminal.	Major	NEC Article 250.24(A)(5)
		The grounded conductor(s) shall be routed with the ungrounded conductors to each service disconnecting means and shall be connected to each disconnecting means grounded conductor(s) terminal or bus.	Major	NEC Article 250.24(C)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	AC Disconnect enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		AC Disconnect is properly rated for expected current load.	Critical	NEC Articles 230.79, 690.17(E) and 110.3(B)
		Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		AC Disconnect Switch must break the ungrounded conductor and keeps the grounded conductor properly grounded and unenergized.	Major	NEC Articles 690.13 and 690.17(B)
		Service disconnect is properly rated for the application.	Major	NEC Article 230.79(D)
	Grounding	Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor must be continuous.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is properly bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		AC Disconnect is grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45

		Requirement	Defect Category	Code Reference
AC Disconnect (continued)	OCPD	Conductors shall be protected against overcurrent in accordance with their ampacity.	Critical	NEC Article 240.4 and 690.9
		The AC OCPD is properly sized for the expected output current of the PV system.	Major	NEC Article 690.9
		Fused AC Disconnect shall be installed and used in accordance with any instruction included in the listing or labeling and Fuses are present.	Major	NEC Article 110.3(B)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Articles 240.22 and 690.17(D)
		PV source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.	Critical	NEC Articles 690.9 and 690.35(B)
		The OCPD is properly sized for the rating of the equipment.	Major	NEC Article 240.3
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Equipment intended to interrupt current at fault levels shall have an interrupting rating sufficient for the current that is available at the line terminals of the equipment.	Major	NEC Articles 110.9, 110.10 and 230.82
		The service overcurrent device shall be an integral part of the service disconnecting means or shall be located immediately adjacent.	Critical	NEC Articles 230.91 and/ or 110.3(B)
AC Module	Conductors	Microinverter output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
	Grounding	Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43

		Requirement	Defect Category	Code Reference
DC Combiner	Conductors	DC Combiner splice components are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		DC Combiner splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Combiner box is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Enclosure rating is sufficient for expected current load in accordance with its listing.	Critical	NEC Article 110.3(B)
		DC Combiner is properly identified and listed.	Major	NEC Articles 110.3(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		DC Combiner box is grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
	OCPD	Combiner string fuse is properly sized.	Major	NEC Article 690.9
		Overcurrent devices used in any DC portion of the PV system shall have the appropriate voltage, current and interrupt ratings.	Major	NEC Article 690.9(C)
		Inverter string fuses are 600 or 1000 VDC rated as required.	Critical	NEC Articles 110.3(B) and 690.9(C)
		DC Combiner string fuse holder is DC rated.	Critical	NEC Articles 110.3(B) and 690.9(C)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Articles 240.22 and 690.17(D)
		PV source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.	Critical	NEC Articles 690.9 and 690.35(B)

		Requirement	Defect Category	Code Reference
DC Disconnect	Conductors	Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	DC Disconnect enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Disconnect is listed for DC use.	Critical	NEC Article 110.3(B) and 690.17
		Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		The PV disconnect means shall disconnect all ungrounded conductors.	Major	NEC Articles 690.13 and 690.17(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		DC Disconnect is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
	OCPD	Disconnect is rated for nominal voltage and current.	Critical	NEC Articles 110.3(B) and 690.17
		Disconnect fuses are DC rated and properly sized for system voltage.	Critical	NEC Articles 110.3(B) and 690.9(C)

		Requirement	Defect Category	Code Reference
Energy Storage	Conductors	Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Battery DC conductors are protected from accidental contact.	Major	NEC Article 690.71(B)(2)
		Correct flexible cables are used for battery interconnections.	Major	NEC Article 690.74
		Battery DC conductors are properly sized for expected current load.	Major	NEC Articles 400.7(A)(10) and 690.74(A)
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		Batteries are properly ventilated.	Critical	NEC Article 480.10
		DC Disconnect is present for ungrounded conductors of battery banks over 30V.	Major	NEC Articles 480.6 and 690.71
		Battery backup system voltage is limited to 50VDC nominal.	Major	NEC Article 690.71(B)(1)
		Charge Controller shall be compatible with the Energy Storage manufacturer's electrical ratings and charging specifications.	Major	NEC article 110.3(B) and IFC 2018, 1206.2.4
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Battery enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	OCPD	A listed, current-limiting, overcurrent device shall be installed in each circuit adjacent to the batteries where the available short circuit from a battery or battery bank exceeds the interrupting or withstand rating of other equipment in that circuit.	Major	NEC Articles 690.16 and 690.71(C)

		Requirement	Defect Category	Code Reference
Feeder Tap Connection	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Conductors are properly spliced.	Major	NEC Articles 110.3(B) and 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		The grounded conductor(s) shall be routed with the ungrounded conductors to each service disconnecting means and shall be connected to each disconnecting means grounded conductor(s) terminal or bus.	Major	NEC Article 250.24(C)
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
	Grounding	Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor is properly bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is present and sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		When a metal water pipe is used as a grounding electrode, there must be a ground jumper present across water meter/filter.	Major	NEC Article 250.53(D)(1)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
Water pipe electrode supplemented by other electrode.		Major	NEC Article 250.53(D)(2)	

		Requirement	Defect Category	Code Reference
Ground Mounted	Conductors	Splice components must be rated for the environment they are installed.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Splices and/ or connectors must be properly secured.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Grounding hardware is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Racking system and support structure are properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Module frames must be grounded. WEEBs and other grounding devices must be installed correctly.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
		Module grounding hardware must be listed for the purpose.	Major	NEC Articles 110.3(B) and 690.43
	Structural	PV Module shall be installed and used in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Ground/pole mount support structure, anchor system, and or footings are installed and used according to manufacturer instructions.	Major	NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Junction Box	Conductors	Junction Box splice components are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surfaces and the ground terminal inside Junction Box.	Minor	NEC Article 250.24(A)(5)
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Junction Box is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Junction Box is properly identified and listed.	Major	NEC Articles 110.3(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor is continuous.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground enclosure.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
	Structural	Roof penetrations are properly sealed and flashed.	Major	NYS Uniform Building Code and NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Load Side Connection	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		The grounded conductor(s) shall be routed with the ungrounded conductors to each service disconnecting means and shall be connected to each disconnecting means grounded conductor(s) terminal or bus.	Major	NEC Article 250.24(C)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Grounding	Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		GEC is continuous/irreversibly spliced.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is properly bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Enclosure is properly grounded using a listed grounding method.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		When a metal water pipe is used as a grounding electrode, there must be a ground jumper present across water meter/filter.	Major	NEC Article 250.53(D)(1)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)
		OCPD	Main panel overcurrent protection is sufficient.	Critical
	PV Backfed breaker is properly sized at, or above 125% of inverter output current.		Major	NEC Article 240.4 and 690.9
	PV Backfed breaker rating size is properly sized to protect circuit conductors.		Critical	NEC Articles 310.15 and/or 690.8(B)
	Back-fed plug in devices shall be secured in place by additional fastener.		Minor	NEC Article 408.36(D)
	Load Side connection of a utility-interactive output circuit must be properly located at the point of connection.		Major	NEC Articles 690.64 and 705.12(D)(2)(3)(b)
	Inverter-interactive output circuit load side connection overcurrent protective device must be properly sized.		Critical	NEC Articles 690.64 and 705.12(D)(2)(3)(b)
	Fuses are present and installed in accordance with any instruction included in the listing or labeling.		Major	NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Microinverter	Conductors	Microinverter output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
	Grounding	Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
Optimizer	Conductors	Optimizer output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Optimizer is properly bonded to the EGC.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Listed means used to ground Optimizer chassis per manufacturer instructions.	Major	NEC Articles 110.3(B), 250.4 and 690.43

		Requirement	Defect Category	Code Reference
Production Meter	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surface and ground terminal inside meter enclosure.	Minor	NEC Article 250.24(A)(5)
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Meter enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Meter is rated for expected current load.	Critical	NEC Article 110.3(B)
	Grounding	Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Grounding electrode conductor is continuous.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Grounding means for enclosure installed.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
Rapid Shutdown Device	Conductors	Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Rapid shutdown device controls conductors of more than 5 feet inside a building and more than 10 feet outside a building.	Major	NEC Article 690.12(1) .
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
Equipment grounding conductor is properly sized.		Major	NEC Article 690.45	

		Requirement	Defect Category	Code Reference
Roof Array	Conductors	Splice components must be rated for the environment they are installed.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Splices and/ or connectors must be properly secured.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Grounding hardware is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Racking system and support structure are properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Module frames must be grounded. WEEBs and other grounding devices must be installed correctly.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Module grounding hardware must be listed for the purpose.	Major	NEC Articles 110.3(B) and 690.43
		The metal roof panels beneath the array shall be bonded together and to an equipment grounding conductor.	Major	NEC Articles 690.43(B) and 250.110
	Structural	Module is properly secured to the racking system per manufacturer instructions.	Major	NEC Article 110.3(B)
		Racking system shall be installed and used in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Roof penetrations are properly sealed and flashed.	Major	IBC Section 1503.2, IPC 903, and NEC Article 110.3(B) .
		All open vent pipes on roof are free from modules and racking system obstructions.	Major	In violation of IBC 903 and/or vent pipe has been modified in violation IBC 903

		Requirement	Defect Category	Code Reference
String Inverter	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Array equipment grounding conductor is installed/terminated in inverter according to manufacturer's instruction.	Major	NEC Article 110.3(B)
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Inverter metal enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
	OCPD	Inverter string fuses are 600 or 1000 VDC rated as required.	Critical	NEC Articles 110.3(B) and 690.9(C)
		Inverter string fuse size matches module string series fuse rating.	Major	NEC Article 690.9(B)

		Requirement	Defect Category	Code Reference
Subpanel	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surface and ground terminal inside meter enclosure.	Minor	NEC Article 250.24(A)(5)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
	Grounding	Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor is continuous.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Subpanel is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	OCPD	Subpanel Overcurrent protection is sufficient.	Critical	NEC Article 240.4 and 690.9
		PV Backfed breaker is properly sized at, or above 125% of inverter output current.	Major	NEC Article 240.4 and 690.9
		PV Backfed breaker rating size is properly sized to protect circuit conductors.	Critical	NEC Articles 310.15 and/or 690.8(B)
		Back-fed plug in devices shall be secured in place by additional fastener.	Minor	NEC Article 408.36(D)
		PV source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.	Critical	NEC Articles 690.9 and 690.35(B)

		Requirement	Defect Category	Code Reference
Supply Side Connection	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Service entrance conductors are properly spliced.	Major	NEC Articles 110.3(B) and 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		The grounded conductor(s) shall be routed with the ungrounded conductors to each service disconnecting means and shall be connected to each disconnecting means grounded conductor(s) terminal or bus.	Major	NEC Article 250.24(C)
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Service disconnect is properly rated for the application.	Major	NEC Article 230.79(D)
		The PV disconnect means shall disconnect all ungrounded conductors.	Major	NEC Articles 690.13 and 690.17(B)
	Grounding	Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor is properly bonded to the main premise grounding electrode system.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Disconnect enclosure is properly grounded using a listed grounding method.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		When a metal water pipe is used as a grounding electrode, there must be a ground jumper present across water meter/filter.	Major	NEC Article 250.53(D)(1)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)
		OCPD	The AC OCPD is properly sized for the expected output current of the PV system.	Major
	No overcurrent device shall be connected in series with any conductor that is intentionally grounded.		Major	NEC Articles 240.22 and 690.17(D)
	PV source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.		Critical	NEC Articles 690.9 and 690.35(B)
	Fuses are present and installed in accordance with any instruction included in the listing or labeling.		Major	NEC Article 110.3(B)
	Equipment intended to interrupt current at fault levels shall have an interrupting rating sufficient for the current that is available at the line terminals of the equipment.		Major	NEC Articles 110.9, 110.10 and 230.82
	The service overcurrent device shall be an integral part of the service disconnecting means or shall be located immediately adjacent thereto.		Critical	NEC Articles 230.91 and/ or 110.3(B)

		Requirement	Defect Category	Code Reference
Xformerless Microinverter	Conductors	Microinverter output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
	Grounding	Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43

		Requirement	Defect Category	Code Reference
Xformerless Inverter	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Inverter DC ungrounded conductors are correctly identified.	Incidental	NEC Article 200.7
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	The Inverter enclosure employs an approved moisture accumulation prevention method.	Major	NEC Articles 314.15 and 110.3(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts.	Major	NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97
		Inverter array frame grounding conductor is installed in accordance with manufacturers instruction.	Major	NEC Article 110.3(B)
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Inverter metal enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
	OCPD	Inverter string fuses are 600 or 1000 VDC rated as required.	Critical	NEC Articles 110.3(B) and 690.9(C)
		Inverter string fuse size matches module string series fuse rating.	Major	NEC Article 690.9(B)