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NEC Article 100 Glossary

209 plain-English definitions from NEC Article 100, each with a field-application note on where it actually matters during plan review and inspection. Original paraphrased wording — not a copy of NFPA 70 code text — written and reviewed by Masterbuild's licensed PE.

This glossary is general reference material, not a substitute for the current adopted code or a project-specific determination. For a determination tied to your drawings, equipment schedule, or AHJ, contact Masterbuild Consulting.

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Contents

General

Accessible

Equipment that can be reached to inspect, repair, or replace without damaging the building — not buried behind finished surfaces.

> *Field note: On plan review, if a junction box or damper motor lands behind drywall with no rated access panel called out, expect a redline.*

Accessible, Readily

Capable of being reached quickly, without climbing over obstacles, using ladders, or moving furniture — a stricter standard than plain "accessible."

> *Field note: Disconnects, breakers, and shutoffs generally need to be readily accessible; equipment tucked above a suspended ceiling with no catwalk usually doesn't qualify.*

Ampacity

The maximum current a conductor can carry continuously, under the conditions of use, without exceeding its temperature rating.

> *Field note: Ampacity gets derated for conduit fill, ambient temperature, and bundling — the nameplate wire size alone doesn't tell you it's adequate.*

Appliance

Utilization equipment, generally factory-built in standardized sizes, that performs a specific function such as heating, cooking, or refrigerating.

> *Field note: Whether something is an "appliance" versus custom equipment changes which listing and clearance rules apply — worth confirming on unusual mechanical/electrical packages.*

Approved

Acceptable to the authority having jurisdiction (the code official) — a determination made locally, not a factory listing.

> *Field note: "Approved" and "listed" are not the same thing; a listed product can still need local approval for its specific installation.*

Attachment Plug (Plug Cap) (Plug)

A device on the end of a flexible cord that, when inserted into a receptacle, connects the cord's conductors to the supply conductors.

> *Field note: Cord-and-plug connected equipment sidesteps some hard-wiring requirements but still has to match receptacle rating and grounding.*

Automatic

Self-acting, operating by its own mechanism when actuated by some impersonal influence, such as a change in current, pressure, or temperature.

> *Field note: An "automatic" transfer switch or damper doesn't need a human to operate it — that distinction matters for sequence-of-operation and controls review.*

Battery System

An interconnected assembly of battery cells, control/protection equipment, and interconnections designed to supply DC power.

> *Field note: Battery system disconnecting means and overcurrent protection have to be sized against the battery's actual available fault current, which can be very high and very different from its rated discharge current.*

Branch-Circuit Selection Current

For a hermetic refrigerant motor-compressor, the value used instead of rated-load current to size branch-circuit conductors, disconnects, and controllers, marked on the equipment when it differs from rated-load current.

> *Field note: HVAC equipment nameplates carry both rated-load current and branch-circuit selection current — using the wrong one for conductor/breaker sizing is a routine error on mechanical-equipment electrical connections.*

Building

A structure that stands alone or is separated from adjoining structures by fire walls.

> *Field note: Whether two structures count as one "building" or two changes service and feeder sizing, plus disconnect location requirements.*

Cabinet

An enclosure designed for either surface or flush mounting and equipped with a frame, mat, or trim in which a swinging door or doors are hung.

> *Field note: "Cabinet" and "cutout box" are related-but-distinct panel enclosure terms used in the panelboard definition — worth knowing when reading equipment spec sheets literally.*

Cable Tray System

A unit or assembly of units or sections forming a rigid structural system for supporting cables and raceways, including ladder, ventilated trough/channel, solid-bottom, and similar structures.

> *Field note: Cable tray fill and support-spacing calculations are frequently missing on retrofit submittals that add cabling to existing tray without re-checking capacity.*

Communications Circuit / Raceway

The circuit or raceway extending from a communications utility or premises equipment, used for voice, data, or similar low-voltage signal transmission, governed by NEC Article 800.

> *Field note: Communications cabling still needs listed, fire-rated (plenum/riser) jacketing and separation from power circuits — a frequent gap when IT contractors run cable outside the electrical scope of coordination.*

Concealed

Rendered inaccessible by the structure or finish of the building; wires in concealed raceways are considered concealed even if accessible by withdrawing them.

> *Field note: Concealed wiring methods have different support and protection rules than exposed ones — this term drives a lot of rough-in inspection criteria.*

Conductor (Bare, Covered, Insulated)

Bare: no covering or insulation. Covered: encased in material not recognized as electrical insulation. Insulated: encased in material recognized as electrical insulation.

> *Field note: A "covered" conductor is not the same as an "insulated" one for code purposes — mixing them up on a submittal is a common redline.*

Conduit Body

A separate portion of a conduit or tubing system that provides access through a removable cover to the interior of the system at a junction or terminal point.

> *Field note: Conduit bodies (LBs, Ts, Cs) have fill limits based on their volume marking — they aren't automatically pull-box equivalents.*

Connected Load

The sum of the rated capacities of all utilization equipment connected to a circuit, feeder, or service, before any demand factor is applied.

> *Field note: Connected load, not demand load, is what a nameplate schedule actually reports — the design calc has to apply the appropriate demand factor from there, not treat connected load as the final service size.*

Connector, Intercell / Interrack

Flexible or rigid conductor assemblies used to connect adjacent battery cells (intercell) or adjacent battery racks/trays (interrack) in a storage battery system.

> *Field note: Battery storage submittals need these connectors sized and rated for the system's available fault current, not just its nominal charge/discharge current.*

Continuous Load

A load where the maximum current is expected to continue for 3 hours or more.

> *Field note: Continuous loads require the 125% sizing factor on conductors and overcurrent devices — missing this is one of the most common calc-sheet errors.*

Controller

A device or group of devices that governs, in a predetermined manner, the electric power delivered to the equipment to which it is connected.

> *Field note: A motor controller isn't automatically a disconnecting means — check whether it also meets disconnect requirements before relying on it as one.*

Controller Disconnecting Means

A disconnecting means located within sight of, or lockable at, a motor controller, used to disconnect the controller from its supply.

> *Field note: Motor controller disconnects and the motor's own disconnect are frequently two different, separately required devices — a single disconnect submitted to cover both is a common plan-review flag.*

Correction Factor

A multiplier applied to conductor ampacity to account for ambient temperature conditions different from the base temperature used in the ampacity tables.

> *Field note: Rooftop or attic runs in hot climates routinely need correction-factor derating — a common miss on mechanical-adjacent electrical runs.*

Demand Factor

The ratio of the maximum demand of a system to the total connected load of that system.

> *Field note: Demand factors let feeders and services be sized smaller than the sum of every connected load — applied wrong, they undersize a panel.*

Device

A unit of an electrical system that carries or controls electric energy as its principal function, but does not utilize it.

> *Field note: Switches and receptacles are "devices"; a water heater is "utilization equipment" — the distinction matters for which article's rules apply.*

Disconnecting Means

A device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.

> *Field note: Working clearance, labeling, and "in sight from" rules all hang on whether something legally qualifies as the disconnecting means — a frequent plan-review flag on mechanical equipment.*

Duty, Continuous / Intermittent / Periodic / Short-Time / Varying

A rating describing the load-time pattern equipment is designed for — Continuous (steady, indefinite), Intermittent (alternating load/no-load or load/rest), Periodic (intermittent with recurring identical cycles), Short-Time (constant load for a short, specified interval), Varying (load and time both vary widely).

> *Field note: Duty-cycle rating changes conductor sizing exceptions (like the reduced ampacity allowed for short-time-duty crane/hoist motors) — applying continuous-duty rules to intermittent-duty equipment oversizes the circuit unnecessarily.*

Electric Vehicle (EV)

An automotive-type vehicle for highway use, primarily powered by an electric motor drawing current from a rechargeable storage battery or other portable energy storage device.

> *Field note: EV classification (versus a golf cart or other low-speed vehicle) determines which NEC article's charging-equipment rules apply — don't assume all electric mobility equipment falls under the same article.*

Electric Vehicle Supply Equipment (EVSE)

Conductors, EV connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatus installed for delivering energy to an EV.

> *Field note: EVSE branch-circuit load calculations (continuous load, load management systems) are one of the fastest-growing sources of panel-capacity disputes on both residential and commercial retrofit projects.*

Electrical Metallic Tubing (EMT) / Electrical Nonmetallic Tubing (ENT)

EMT: an unthreaded thin-wall metal raceway that may serve as an equipment grounding conductor path when properly installed. ENT: a pliable, corrugated, nonmetallic raceway that cannot serve as an EGC and needs its own conductor for that purpose.

> *Field note: Relying on EMT couplings for continuity without properly tightened set-screw or compression fittings is a common failed-bonding-path finding in the field.*

Electroplating (Electrolytic Cells, Systems)

An electrochemical process using low-voltage, high-current DC power supplies (rectifiers) to deposit or remove metal from a workpiece, governed by NEC Article 669.

> *Field note: Electroplating DC bus and rectifier grounding rules differ substantially from AC power distribution — treat these as a specialty industrial scope requiring its own dedicated review, not a variation on standard power distribution.*

Enclosed / Enclosure

Enclosed: surrounded by a case, housing, fence, or wall that prevents persons from accidentally contacting energized parts. Enclosure: the case or housing that provides that protection.

> *Field note: NEMA/UL enclosure type ratings (3R, 4, 4X, 12) get specified based on the environment — an indoor-rated enclosure on a rooftop condensing unit is a common redline.*

Enclosure Type Rating (NEMA 3R, 4, 4X, 12)

Standardized enclosure classifications describing the degree of protection against ingress of water, dust, and corrosion — 3R for rain/sleet, 4/4X for washdown and corrosion resistance, 12 for dust/dripping-liquid in indoor industrial settings.

> *Field note: Enclosure type is an equipment-selection decision driven by environment, not a code article by itself — the NEC generally just requires equipment be "suitable for the location," and the NEMA type is how that suitability gets documented.*

Energized

Electrically connected to, or is, a source of voltage.

> *Field note: Lockout/tagout and "de-energized" verification procedures hinge on this exact definition — a circuit with voltage present anywhere on it, even if the load is off, is still energized.*

Energy Storage System (ESS)

One or more components assembled to store energy and supply electrical energy at a future time, such as battery, flywheel, or capacitor-based systems.

> *Field note: ESS fire-rated separation, ventilation, and thermal-runaway-mitigation requirements are increasingly driven by fire code as much as electrical code — coordinate the electrical submittal with the fire marshal's requirements early.*

Equipment

A general term including material, fittings, devices, appliances, luminaires, apparatus, machinery, and similar items used as part of, or in connection with, an electrical installation.

> *Field note: "Equipment" is the umbrella term the code uses for almost everything physical in the system — useful shorthand when scoping a review.*

Exposed (Wiring Methods)

On or attached to the surface, or behind panels designed to allow access.

> *Field note: Exposed wiring methods carry different physical-protection rules than concealed ones — relevant on mechanical rooms and exposed-structure spaces.*

Field Evaluation Body

An organization or part of an organization that performs field evaluations of electrical or other equipment, providing an on-site listing/labeling determination when factory listing isn't available.

> *Field note: A field evaluation label is a legitimate path to code compliance for otherwise-unlisted or custom equipment — but it has to come from a recognized field evaluation body, not a self-certification by the installer or a generic engineer's letter.*

Fire Alarm Circuit (Power-Limited / Non-Power-Limited)

Circuits that supply power to, or carry signals for, a fire alarm system, classified as power-limited (low-energy, Class-2-like) or non-power-limited (higher energy, requiring stricter wiring methods).

> *Field note: Fire alarm circuit type drives completely different wiring-method, separation, and survivability rules — confirm which type a fire alarm shop drawing is using before checking it against a general low-voltage checklist.*

Fire Pump (Electrical Supply)

A pump, and its electrical supply and controller, dedicated to providing water flow and pressure for a fire protection system, with its own dedicated feeder requirements under NEC Article 695.

> *Field note: Fire pump feeder routing and survivability requirements (fire-rated construction or physical routing away from hazard areas) are frequently coordinated late, after the electrical riser is already set — flag fire pump service early in design.*

Fitting

An accessory such as a locknut, bushing, or other part of a wiring system intended primarily to perform a mechanical rather than an electrical function.

> *Field note: Fittings don't carry current by design — if a submittal is using a fitting to also serve as a bonding path, confirm it's specifically listed for that.*

Full-Load Current (Motor)

The current a motor draws when operating at its rated load, voltage, and frequency — used for conductor ampacity and overload-protection sizing, taken from NEC tables rather than the motor nameplate in most cases.

> *Field note: NEC Table 430 full-load current values (not the nameplate FLA) govern conductor and branch-circuit sizing for general-purpose motors — using the nameplate figure instead is a common and code-flagged calculation substitution.*

Guarded

Covered, shielded, fenced, enclosed, or otherwise protected by suitable covers, casings, barriers, rails, screens, mats, or platforms to remove the likelihood of approach or contact by persons or objects to a point of danger.

> *Field note: "Guarded" is a physical-barrier concept, separate from "enclosed" — a piece of open equipment behind a fence is guarded, not enclosed.*

Handhole Enclosure

An enclosure with an open or closed bottom, sized to allow entry for installing/maintaining underground conductors/cables/equipment, but not intended for personnel entry.

> *Field note: Handhole enclosures still need proper cover ratings (traffic vs. non-traffic) and grounding/bonding of any metal parts — a common miss on underground utility coordination between electrical and civil scopes.*

Hazardous (Classified) Location

An area where fire or explosion hazards may exist due to flammable gases, vapors, liquids, combustible dust, or ignitable fibers, classified by Class/Division or Zone system.

> *Field note: Hazardous-location classification is normally the mechanical/process engineer's call, not the electrical designer's — but the electrical scope (equipment listing, seal fittings, wiring methods) has to match that classification exactly.*

Heating System, Induction / Skin-Effect / Impedance

Induction Heating: heats a material via electromagnetically induced current. Skin-Effect Heating: heats a pipe/vessel via high-frequency current concentrated near its surface. Impedance Heating: passes current directly through the material or pipe to be heated using its own electrical resistance.

> *Field note: These industrial process-heating methods each carry their own grounding, control, and RF-emission rules under NEC Article 665 — not standard resistance-heating rules, so don't apply a typical heat-trace checklist to them.*

Identified (as applied to equipment)

Recognized as suitable for the specific purpose, function, use, environment, application, and so forth, where described in a particular NEC requirement.

> *Field note: "Identified" is a lower bar than "listed" — it means suitability has been recognized, not necessarily third-party certified for that exact use, which matters when evaluating a substitution.*

Identified Conductor (Marking)

A conductor marked or colored to distinguish its function — white/gray for grounded conductors, green for equipment grounding conductors — recognized system-wide for quick field identification.

> *Field note: Re-using white conductor as an ungrounded conductor without re-marking it (a common shortcut in multiwire branch circuits) is a serious and easily inspected code violation.*

Impedance Protected (Motor)

A motor with windings that have a sufficiently high impedance to limit locked-rotor current to a level that avoids overheating damage during a stalled condition.

> *Field note: Impedance-protected motors change the required overload and branch-circuit protection sizing compared to a standard motor — confirm the motor's actual protection type before applying a generic motor-circuit calc.*

In Sight From (Within Sight From, Within Sight)

Visible and not more than 50 ft (15 m) distant from the other object.

> *Field note: This exact 50-foot / visibility rule is what determines whether equipment needs its own local disconnect versus relying on one further away — a frequent equipment-schedule flag.*

Information Technology Equipment (ITE)

Equipment such as computers, servers, and peripherals used to store, process, or transfer information, historically governed by dedicated rules (NEC Article 645) for reduced-clearance disconnects and under-floor wiring in a controlled environment.

> *Field note: The Article 645 "special" allowances (like reduced disconnect labeling requirements) only apply when a room meets every qualifying condition — a data closet that doesn't meet the full Article 645 room criteria has to follow ordinary Chapter 1-4 rules instead.*

Interconnected Electric Power Production Sources

Generating sources (PV, wind, fuel cells, generators) operating in parallel with a primary source of electricity, such as a utility.

> *Field note: Interconnected sources trigger the NEC's 120% busbar rule and load-side/supply-side connection analysis — a common miscalculation point when a solar array is added to an existing, already-loaded panel.*

Interrupter Switch

A switch capable of making, carrying, and interrupting specified currents under normal circuit conditions, and also making and carrying for a specified time and interrupting fault currents.

> *Field note: Interrupter switches are common in medium-voltage distribution — confirm the switch's fault-current interrupting duty matches the actual system, not just its continuous-current rating.*

Intrinsically Safe System / Simple Apparatus

An assembly of interconnected intrinsically safe apparatus, associated apparatus, and interconnecting cable in which the circuits are incapable of causing ignition in a hazardous location. Simple Apparatus: a passive component that cannot generate more than 1.2V, 0.1A, 25mW, or 20µJ.

> *Field note: Intrinsically safe field wiring documentation (entity/FISCO parameter matching) is a paperwork-heavy submittal item that's often missing entirely on process-facility electrical packages.*

Inverter, Interactive / Multimode / Stand-Alone

Interactive: operates in parallel with and can deliver power to an electric primary source supply. Multimode: can operate either interactive or stand-alone. Stand-Alone: supplies power independently of an electric power production and distribution network.

> *Field note: Which inverter mode a system runs in changes rapid-shutdown, anti-islanding, and interconnection paperwork requirements — get this wrong on a PV submittal and the utility interconnection agreement won't match the equipment.*

Irrigation Machine

An electrically driven or controlled machine, such as a center-pivot irrigation system, with one or more motors, along with the controls, switches, and other electrical equipment for its use.

> *Field note: Irrigation machines have their own grounding, GFCI, and disconnecting-means article (NEC 675) distinct from standard motor-circuit rules — a common oversight on agricultural electrical submittals that default to Article 430.*

Isolated (as applied to location)

Not readily accessible to persons unless special means for access are used.

> *Field note: "Isolated" is a location concept distinct from "isolated ground" (a wiring concept) — don't conflate the two when reading a spec note.*

Labeled

Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization acceptable to the authority having jurisdiction and concerned with product evaluation.

> *Field note: "Labeled" and "listed" overlap but aren't identical concepts — both point back to third-party evaluation, which is what a plan reviewer is actually checking for.*

Legally Required Standby Systems

Systems required by municipal, state, federal, or other codes to automatically supply power to selected loads (other than emergency systems) when normal power is lost.

> *Field note: Legally required standby differs from "emergency system" in transfer time and code driver — confirm which specific code is requiring the standby power before assuming NEC emergency-system rules apply wholesale.*

Life Safety Branch / Essential Electrical System

A system of feeders and branch circuits, part of a health care facility's essential electrical system, that supplies illumination, receptacles, and equipment essential for life safety after normal power loss.

> *Field note: The life safety branch has strict separation and transfer-time rules from the rest of the essential electrical system — combining it with equipment or critical branch loads on the same panel is a serious life-safety design error.*

Lighting Outlet

An outlet intended for the direct connection of a lampholder, a luminaire, or a pendant cord terminating in a lampholder.

> *Field note: A lighting outlet is a specific outlet subtype — general receptacle outlets don't count toward required lighting-outlet locations (like at electrical panels or attic access).*

Line Isolation Monitor

A test instrument that continually checks the balanced and unbalanced impedance from each line of an isolated power system to ground, alarming when total hazard current exceeds a threshold.

> *Field note: Isolated power systems (used in some operating rooms) require a functioning, tested line isolation monitor — a common commissioning-checklist item that gets missed if the health-care equipment vendor and electrical contractor don't coordinate testing responsibility.*

Line-to-Line / Line-to-Neutral

Line-to-Line: an electrical reference between two ungrounded (current-carrying) conductors. Line-to-Neutral: an electrical reference between an ungrounded conductor and the neutral conductor.

> *Field note: Mixing up line-to-line and line-to-neutral voltage readings is a classic field troubleshooting error on multiwire branch circuits and 208/120V systems.*

Listed

Equipment, materials, or services included in a list published by an organization acceptable to the authority having jurisdiction and concerned with evaluation of products, that maintains periodic inspection of production and states compliance with appropriate standards.

> *Field note: Field-fabricated or unlisted equipment substitutions are one of the fastest ways to get a permit set rejected — always confirm listing before finalizing a spec.*

Load Management System

Equipment, including hardware and software, that monitors and controls electric loads, sometimes limiting current or power to keep a system within its rated capacity.

> *Field note: An energy management system (EMS) that dynamically limits EV charger or panel load can be used to avoid a service upgrade — but it has to be a listed device with the load-control function itself listed, not just a smart breaker with an app.*

Location, Damp / Dry / Wet

Damp: partially protected locations subject to moderate moisture (e.g., under a canopy). Dry: not normally subject to dampness or wetness. Wet: unprotected and exposed to weather, or subject to saturation with water or other liquids.

> *Field note: Equipment rated for a damp location isn't automatically rated for a wet one — rooftop and pool-deck equipment gets flagged constantly on this exact distinction.*

Locked-Rotor Current

The steady-state current a motor draws when its rotor is stalled, at rated voltage and frequency — significantly higher than full-load running current.

> *Field note: Motor branch-circuit short-circuit and ground-fault protection sizing is based on locked-rotor current, not full-load current — using the wrong figure is one of the most common motor-circuit calculation errors.*

Low-Voltage Suspended Ceiling Power Distribution System

A system using the metal grid of a suspended ceiling, specifically listed for the purpose, as current-carrying conductors for low-voltage lighting or equipment.

> *Field note: Only grids specifically listed for power distribution may carry current this way — retrofitting a standard suspended-ceiling grid to carry low-voltage power without that listing is a serious, easily overlooked violation.*

Luminaire

A complete lighting unit consisting of a light source plus the parts that position it, protect it, and connect it to the power supply.

> *Field note: NEC luminaire clearance and support rules (clothes closets, insulation contact, damp/wet locations) get missed far more often than the fixture spec itself.*

Luminaire, Dry-Niche / No-Niche / Wet-Niche

Pool/fountain luminaire types defined by whether they sit in a sealed dry recess (Dry-Niche), mount without a recess (No-Niche), or sit directly in water inside a forming shell (Wet-Niche).

> *Field note: Each niche type has its own bonding, GFCI, and wiring-method rules — swap one for another on a pool submittal and the whole circuit protection scheme changes.*

Manufactured Wiring System

A system of pre-assembled circuit and outlet components, factory-wired and listed as a system, installed in structures.

> *Field note: Manufactured wiring systems still need field verification that components weren't mixed with non-matching listed parts — a common value-engineering shortcut that voids the listing.*

Membrane Enclosure

A temporary enclosure using a nonrigid material (fabric, plastic sheeting) to define a construction area, often used in health care or industrial infection/dust-control settings.

> *Field note: Temporary power inside a membrane enclosure needs GFCI and cord-management provisions similar to a construction site, even in an otherwise finished occupied building.*

Metal Shield Connections

Means of connection for the flat conductive shielding tape or braid on certain cable types, providing a controlled path for grounding the cable's electrostatic or electromagnetic shield.

> *Field note: An unterminated or improperly grounded cable shield defeats its noise-reduction purpose and can create a stray-current path — verify shield terminations at both ends were actually landed, not just left floating for "future use."*

Microgrid System

An electric power system containing multiple electric power sources (utility, PV, storage, generator) and loads capable of operating in parallel with, or independently from, the primary power source.

> *Field note: Microgrid interconnect devices and controls are a relatively new NEC Article 710 scope area — many AHJs are still building review checklists for these, so expect longer plan-review cycles than a standard service upgrade.*

Motor Control Center

An assembly of one or more enclosed sections with a common power bus and primarily containing motor control units.

> *Field note: MCC bus bracing/AIC rating has to match the actual available fault current at that point in the distribution system — a frequent gap on industrial/commercial mechanical-room submittals.*

Multioutlet Assembly

A surface, flush, or freestanding raceway assembly designed to hold conductors and receptacles, field- or factory-assembled.

> *Field note: Multioutlet assemblies (like plugmold strips) have their own load-calculation rule (per foot or per unit) that's easy to miss when doing a general receptacle load takeoff.*

Nameplate Rating

The electrical characteristics (voltage, current, power, frequency) a manufacturer marks directly on a piece of equipment as its rated operating values.

> *Field note: Nameplate values sometimes differ from NEC table values used for circuit design (see full-load current) — know which figure a given calculation is supposed to use before pulling a number off the equipment tag.*

Neon Tubing

Electric-discharge luminous tubing bent into shapes to form letters, parts of letters, skeleton tubing, outline lighting, or art forms.

> *Field note: Neon secondary-circuit wiring has its own spacing-from-combustibles and support rules distinct from ordinary low-voltage signage circuits — often missed on custom-fabricated signage.*

Nonincendive Equipment / Circuit / Component

Equipment, circuits, or components that, in normal operation, are incapable of igniting a specified flammable gas-air, vapor-air, or dust-air mixture.

> *Field note: "Nonincendive" is a lower protection tier than "intrinsically safe" or "explosionproof" and is only acceptable in*

> *certain Division 2 / Zone 2 applications — verify area classification before accepting nonincendive-rated equipment.*

Nonlinear Load

A load where the current waveform after a half-cycle of energization does not follow the voltage waveform's shape.

> *Field note: Nonlinear loads (VFDs, LED drivers, switching power supplies) drive harmonic current and neutral-sizing concerns that a simple full-load-amps calc will miss.*

Normal / Emergency Power Source

A power source, on the load side of a transfer switch, that can be arranged to supply both normal and emergency loads.

> *Field note: Combining normal and emergency loads on one source through a transfer switch has strict separation and monitoring requirements downstream — don't assume a shared source automatically satisfies emergency-system independence rules.*

Optical Radiation (Equipment)

Electromagnetic radiation at wavelengths between about 100 nm and 1 mm (encompassing UV, visible, and IR light), relevant to equipment such as lasers and certain lighting/medical devices covered by specific NEC provisions.

> *Field note: Optical-radiation-emitting equipment (medical lasers, UV disinfection) often carries additional interlock and signage requirements beyond standard electrical rules — confirm with equipment manufacturer documentation, not just the electrical nameplate.*

Organ, Electronic / Pipe

Electronic Organ: a musical instrument producing sound electronically. Pipe Organ: a musical instrument producing sound acoustically through pipes, with an associated electric/electronic wind-supply and control system.

> *Field note: Pipe organ blower and relay-system wiring in older buildings is frequently undocumented — treat any organ electrical work as existing-conditions verification first, not a straightforward new-equipment connection.*

Outlet

A point on the wiring system at which current is taken to supply utilization equipment.

> *Field note: Every receptacle is an outlet, but not every outlet is a receptacle — a hardwired connection point for a fan or unit heater is also an "outlet" for code-counting purposes.*

Panelboard

A single panel or group of panel units designed for assembly in the form of a single panel, including buses, automatic overcurrent devices, with or without switches for the control of light, heat, or power circuits, designed to be placed in a cabinet or cutout box.

> *Field note: Panelboard schedules are one of the highest-value things to verify line-by-line — breaker AIC rating, bus rating, and main size all have to agree with the feeder and fault-current study.*

Photovoltaic (PV) Array

A mechanically integrated assembly of PV modules, together with support structure and foundation, that acts as a single electricity-producing unit.

> *Field note: Array boundary and rapid-shutdown-array-boundary distances (usually 1 ft from the array) are a common dimensional miss on rooftop solar drawings.*

Photovoltaic (PV) Module

A complete, environmentally protected unit consisting of solar cells, optics, and other components designed to generate DC power when exposed to sunlight.

> *Field note: Module-level power electronics (MLPE) requirements for rapid shutdown often eliminate the need for separate array disconnects — confirm which compliance path a submittal is actually using before flagging a missing device.*

Photovoltaic (PV) System

The total components and subsystems that, in combination, convert solar energy into electric energy suitable for connection to a utilization load.

> *Field note: PV system rapid-shutdown, disconnect-labeling, and conductor-marking requirements are among the most frequently redlined items on solar submittals because they change almost every code cycle.*

Plenum

A compartment or chamber to which one or more air ducts are connected and that forms part of the air distribution system.

> *Field note: Plenum-rated cable is mandatory in return-air plenum spaces — using riser-rated cable there instead is a routine and serious low-voltage/fire-alarm rough-in violation.*

Portable (equipment)

A device intended for indoor or outdoor use that is moved from one location to another and is not fastened in place, typically connected by cord and plug.

> *Field note: Portable equipment on a temporary power or construction-site submittal has its own GFCI and cord-condition inspection expectations distinct from permanently installed equipment.*

Portable Power Distribution Unit

Equipment that includes overcurrent protection and multiple receptacles or connectors, designed to distribute power temporarily, commonly used on film/TV production, events, and construction sites.

> *Field note: Portable distribution units still need GFCI protection on their 125V 15/20/30A outputs and correct overcurrent coordination with the feeder supplying them — treat them with the same rigor as any other temporary power equipment.*

Power Export Equipment (EV)

Equipment on an EV, or connected to it, that provides power from the vehicle's onboard energy storage to premises wiring or an external load.

> *Field note: Vehicle-to-grid/vehicle-to-home power export is a newer NEC scope area (Article 625) with interconnection rules that mirror PV interactive systems — treat it with the same rigor as a solar interconnection, not as a simple accessory.*

Power Supply, Class 2

A power source, either inherently limited or using a listed transformer/electronic device, that supplies a Class 2 circuit and limits output to safe, low-energy levels.

> *Field note: Only listed Class 2 power supplies may be used to originate a Class 2 circuit — field-substituting a generic low-voltage transformer voids the reduced wiring-method allowances that make Class 2 circuits attractive in the first place.*

Premises Wiring (System)

Interior and exterior wiring, including power, lighting, control, and signal circuit wiring, together with all their associated hardware, fittings, and wiring devices, on the premises from the service point or power source to the outlets, that is not classified as "internal wiring."

> *Field note: This is the boundary term that separates code-regulated premises wiring from the manufacturer-controlled internal wiring inside listed equipment.*

Process Seal

A seal between electrical apparatus/wiring and a flammable or combustible fluid process, intended to minimize the possibility of the process fluid entering the electrical system.

> *Field note: Process seals are a chemical-process-engineering concept, not just an electrical fitting — coordinate the seal spec with the process engineer, not just the conduit seal-off rules in Article 501.*

Qualified Person

One who has skills and knowledge related to the construction and operation of the electrical equipment and installations, and has received safety training on the hazards involved.

> *Field note: Several NEC allowances (like certain arc-flash or energized-work provisions) apply only when a qualified person is performing the task — not just any licensed trade worker.*

Raceway

An enclosed channel of metal or nonmetallic materials designed expressly for holding wires, cables, or busbars, with additional functions as permitted in the NEC.

> *Field note: Conduit fill calculations and derating are both raceway-driven — always confirm the actual raceway type on a submittal before checking fill percentage.*

Rapid Shutdown (PV Systems)

A required function that reduces shock hazard for emergency responders by de-energizing PV system conductors to specified voltage limits within specified time limits when initiated.

> *Field note: Rapid-shutdown labeling at the service disconnect and initiation-switch location is one of the single most-cited AHJ inspection failures on residential solar.*

Rated-Load Current

For a hermetic refrigerant motor-compressor, the current marked on the equipment nameplate when it's tested and rated under standard operating conditions.

> *Field note: Rated-load current (not locked-rotor current) is the baseline figure for sizing an HVAC compressor's disconnect and branch-circuit conductors, with a separate, higher figure used for short-circuit/ground-fault protection.*

Receptacle

A contact device installed at an outlet for the connection of a single attachment plug, or for the direct connection of electrical utilization equipment designed to mate with the corresponding contact device.

> *Field note: A duplex device with two plug positions on the same yoke is counted as two receptacles for load-calculation and spacing purposes.*

Receptacle Outlet

An outlet where one or more receptacles are installed.

> *Field note: Required receptacle-outlet spacing rules (like the 6/12-foot dwelling rule) are counted by outlet location, not by individual receptacle device.*

Shore Power

The electrical equipment required to power a boat, including the shore power cable and wiring device, but not the boat's onboard electrical system.

> *Field note: Shore power cable listing and connector type have to match the marina's actual power outlet configuration — a mismatch here is one of the most common marina-inspection deficiencies.*

Sign / Outline Lighting

Sign: a fixed, stationary, or portable self-contained electrically illuminated utilization equipment with a static or changing message. Outline Lighting: an arrangement of incandescent lamps, LEDs, or tubing to outline or call attention to a building feature or sign.

> *Field note: Every sign now requires its own disconnecting means within sight of, or lockable at, the sign — a routine miss on tenant-installed signage that bypasses the base building's electrical permit process.*

Stage Switchboard, Fixed / Portable

Fixed: a permanently installed switchboard used for controlling stage lighting circuits. Portable: a switchboard mounted on a moveable frame, connected by cord/cable/plug, used similarly but relocatable.

> *Field note: Portable stage switchboards get connected/disconnected far more often than typical equipment — cord condition and connector rating checks matter more here than on fixed gear.*

Stand-Alone System

A system that supplies power independently of an electric power production and distribution network — i.e., an off-grid PV or generator system.

> *Field note: Stand-alone systems don't need interconnection or anti-islanding provisions the way interactive systems do, but they carry their own battery/inverter sizing and grounding requirements that a grid-tied checklist won't catch.*

Standby / Emergency Generator (Power Source, Alternate)

An alternate source of electric power, other than the normal utility supply, intended to serve some or all of a premises' loads when normal power is lost.

> *Field note: Generator grounding (bonded neutral vs. floating neutral) depends entirely on whether it's a separately derived system, which itself depends on transfer switch design — a common source of ground-fault-relay nuisance tripping when*

> *wired wrong.*

Structure

That which is built or constructed, other than equipment.

> *Field note: This broad, deliberately open definition is what lets the code apply its structure-related rules (like the "building" separation test) to things beyond conventional buildings — signs, towers, canopies.*

Structure, Relocatable

A factory-assembled structure, transportable in one or more sections, designed to be used with or without a permanent foundation, not including recreational vehicles or manufactured/mobile homes.

> *Field note: Relocatable structures (modular classrooms, site trailers) need their own feeder-connection and grounding-electrode approach each time they're re-sited — treat every move as a new service unless verified otherwise.*

Switch, General-Use / Isolating / Motor-Circuit

General-Use: a switch for general distribution and branch-circuit use, rated in amperes and capable of interrupting rated current. Isolating: intended for isolating a circuit from its source, not to be operated under load. Motor-Circuit: rated in horsepower, capable of interrupting the rated current of a motor at rated voltage.

> *Field note: Using an isolating switch as a load-break disconnect is a real safety hazard, not just a paperwork issue — verify the switch type matches how it will actually be operated.*

Switchboard

A large single panel, frame, or assembly of panels having a frame-mounted assembly of switches, overcurrent, and other protective devices, with or without instruments, intended for service entrance, feeder, or branch-circuit distribution.

> *Field note: Switchboards versus panelboards are distinguished by size, mounting, and accessibility — the distinction changes working-clearance and labeling requirements.*

Switchgear

An assembly completely enclosed on all sides and top, containing primarily electric supply distribution equipment such as switches, interrupting devices, and buses.

> *Field note: Switchgear vs. switchboard vs. panelboard is a size/construction hierarchy, not interchangeable terminology — using the wrong term on a spec can trigger an unnecessary substitution dispute.*

Temporary Equipment / Wiring

Wiring and equipment installed for a limited time — construction power, special events, testing — not intended for permanent use, with a fixed permitted duration and removal requirement.

> *Field note: Temporary wiring still requires GFCI protection on all 125V, 15/20/30A receptacles and has its own support/protection rules — "temporary" is not a lower safety standard, just a time-limited one.*

Third-Party Testing Laboratory Mark (UL, ETL, CSA, etc.)

The physical label or symbol applied by a Nationally Recognized Testing Laboratory (NRTL) confirming a product has been evaluated against the applicable safety standard — the practical evidence behind the "listed" definition.

> *Field note: When verifying "listed" status on a submittal, look for the actual NRTL mark on the equipment cut sheet or nameplate photo, not just a written claim in the specification — the mark is the primary evidence a reviewer or inspector will check.*

Transfer Switch, Automatic / Bypass Isolation

Automatic: self-acting equipment that transfers a load between two power sources. Bypass Isolation: a transfer switch arrangement that allows manual bypass of the automatic switch for maintenance without interrupting power to the load.

> *Field note: Bypass-isolation transfer switches let maintenance happen without a life-safety power outage — a code-driven feature for many health care and high-rise emergency systems, not just a maintenance convenience.*

Transformer

Equipment, single-phase or polyphase, that transforms electrical energy from one voltage/current combination to another using electromagnetic induction.

> *Field note: Transformer secondary-conductor protection and overcurrent-device sizing follow their own set of rules that are frequently confused with primary-side feeder sizing.*

Truck / Vehicle (EV context)

A motor vehicle designed for the transportation of persons or property, referenced in the NEC for equipment such as flanged surface inlets and EV supply equipment connections.

> *Field note: EV charging equipment ratings and cable-management hardware are frequently spec'd around passenger-vehicle assumptions that don't match a fleet's actual truck/van dimensions — confirm vehicle type before finalizing station layout.*

Trunk Cable

A portable extension cable containing six or more current-carrying conductors, used to distribute power to multiple branch circuits or loads at a temporary event or production.

> *Field note: Trunk cable overcurrent protection and load balancing across its internal conductors have to be verified against the actual connected equipment schedule, not just the cable's overall ampere rating.*

Twofer

An assembly containing one male plug and two female cord connectors intended for portable stage/entertainment equipment, allowing two loads to be supplied from a single outlet.

> *Field note: Twofers effectively double the load on a single circuit — a common source of overloaded stage/event circuits when the total connected wattage isn't checked before daisy-chaining.*

Unit Equipment (Emergency)

A battery-equipped emergency luminaire assembly consisting of a rechargeable battery, charger, provisions for one or more lamp heads, and a relaying device to energize the lamps on loss of normal power.

> *Field note: Unit equipment (emergency battery packs) is not a substitute for a properly designed life-safety branch when the code requires one — a common shortcut on small commercial tenant fit-outs.*

Utilization Equipment

Equipment that utilizes electric energy for electronic, electromechanical, chemical, heating, lighting, or similar purposes.

> *Field note: This is the counterpart to "device" — utilization equipment actually consumes the power rather than just carrying or controlling it.*

Ventilated

Provided with a means to permit circulation of air sufficient to remove an excess of heat, fumes, or vapors.

> *Field note: "Ventilated" equipment enclosures rely on airflow for their thermal rating — blocking vents during a retrofit or re-skin can silently invalidate the equipment's listing conditions.*

Voltage Drop

The reduction in voltage between the source and the load caused by conductor impedance, generally recommended to be limited to 3% on branch circuits and 5% total (feeder plus branch circuit) for reasonable equipment operation, per NEC informational notes.

> *Field note: Voltage drop limits are recommendations in an informational note, not hard NEC requirements — but exceeding them causes real equipment performance problems (motor overheating, dimming), so a plan reviewer flagging it is giving genuinely useful, not just technical, feedback.*

Voltage, High / Low / To Ground

High Voltage: over 600V (1000V for AC per newer text). Low Voltage: at or below that threshold, per equipment listing. Voltage to Ground: for grounded systems, the voltage between a given conductor and ground; for ungrounded systems, the greatest voltage between the conductor and any other conductor.

> *Field note: "Voltage to ground" — not line voltage — is what drives working-clearance and PPE category decisions in most field safety programs.*

Voltage, Nominal

A nominal value assigned to a circuit or system for the purpose of conveniently designating its voltage class (e.g., 120, 208, 240, 480).

> *Field note: Nominal voltage is a class label, not a measured value — actual operating voltage is expected to vary within a defined range around it.*

Watertight / Raintight / Rainproof

Watertight: constructed so water will not enter under specified test conditions. Raintight: constructed or protected so exposure to a beating rain will not result in water entering. Rainproof: constructed, protected, or treated so exposure to a beating rain will not interfere with successful operation.

> *Field note: These three ratings are not interchangeable, and an outdoor equipment submittal that says "weatherproof" without specifying which of the three applies is an incomplete spec, not just loose language.*

Weatherproof

Constructed or protected so that exposure to the weather will not interfere with successful operation.

> *Field note: "Weatherproof" does not automatically mean "raintight" or "watertight" — those are separate, more specific ratings; don't treat the terms as interchangeable on a submittal.*

Wireways, Metal / Nonmetallic

Sheet-metal or flame-retardant nonmetallic troughs with hinged or removable covers, for housing and protecting wires and cable, in which conductors are laid in place after the wireway is installed.

> *Field note: Wireway fill percentage limits are different from conduit fill limits — applying the conduit table to a wireway submittal is a common calculation error.*

Wiring Device

An electrical device with a yoke, or used with wiring systems, such as switches, receptacles, attachment plugs, and wall plates.

> *Field note: The wiring-device category is the umbrella that catalogs (and code-flags) both switches and receptacles together — useful when a submittal's device schedule needs a single sanity check.*

Working Space (Working Clearance)

The clear depth, width, and height maintained in front of electrical equipment to allow safe operation and maintenance access, sized by voltage and condition per the NEC's clearance tables.

> *Field note: Working-clearance violations — storage, plumbing, or ductwork encroaching in front of a panel — are one of the single most common field citations, and one of the easiest to design around up front.*

Zone

A physically identifiable area, such as separate rooms, defined by the extent of hazardous (classified) location classification or fire/life-safety subdivision, depending on context.

> *Field note: "Zone" in the NEC's hazardous-location articles (Zone 0/1/2, Zone 20/21/22) uses a different classification system than the Class/Division scheme — don't mix the two on a hazardous-area drawing.*

Grounding & Bonding

Bonded (Bonding)

Connected to establish electrical continuity and conductivity between metal parts that must be electrically joined.

> *Field note: Bonding and grounding are related but distinct: bonding ties metal parts together so they're at the same potential, grounding ties the system to earth.*

Bonding Jumper

A reliable conductor used to ensure electrical conductivity between metal parts required to be electrically connected.

> *Field note: Main bonding jumpers (at service equipment) and equipment bonding jumpers (downstream) are sized and installed differently — don't treat them as interchangeable on a plan set.*

Concrete-Encased Electrode ("Ufer Ground")

A grounding electrode consisting of at least 20 ft of rebar or bare copper conductor encased in at least 2 in. of concrete, located near the bottom of a foundation or footing in direct contact with earth.

> *Field note: When a qualifying concrete-encased electrode exists, the NEC requires it to be used — a service that skips it in favor of driven rods alone is a common and citable grounding-electrode-system omission.*

Equipment Grounding Conductor (EGC)

The conductive path that connects normally non-current-carrying metal parts of equipment to the system grounded conductor, grounding electrode conductor, or both.

> *Field note: An EGC carries fault current only, not normal operating current — mixing it up with the neutral (grounded conductor) downstream of the service is a serious, code-flagged error.*

Ground

The earth.

> *Field note: Simple on paper, but every other grounding/bonding term in Article 100 is defined relative to this one — worth anchoring a field discussion here when a crew is confused about grounding terminology.*

Ground Fault

An unintentional, electrically conductive connection between an ungrounded conductor and normally non-current-carrying conductive parts, equipment, or ground.

> *Field note: A ground fault is different from a short circuit (line-to-line) — GFCI protection targets ground faults specifically, at much lower current thresholds.*

Ground Ring

A grounding electrode encircling a building or structure, buried at least 30 in. deep, consisting of at least 20 ft of bare copper conductor sized per the NEC's largest-service-conductor table.

> *Field note: Ground rings are common on larger commercial/industrial sites with sensitive electronic loads — verify the buried conductor's actual depth and bonding to the main grounding electrode system before signing off on a submittal that claims one exists.*

Ground-Fault Circuit-Interrupter (GFCI)

A device intended for the protection of personnel that de-energizes a circuit or portion thereof within an established period of time when a ground-fault current exceeds the values established for a Class A device.

> *Field note: GFCI protects people; it does not protect equipment or wiring from overcurrent — don't let a GFCI receptacle substitute for a required breaker.*

Ground-Fault Protection of Equipment (GFPE)

A system intended to provide protection of equipment from damaging line-to-ground fault currents by causing a disconnecting means to open all ungrounded conductors of the faulted circuit.

> *Field note: GFPE (equipment-level) and GFCI (personnel-level) trip at very different current thresholds — don't assume one satisfies the other's requirement.*

Grounded (Grounded Conductor)

Grounded: connected to ground or to a conductive body that extends the ground connection. Grounded Conductor: a system or circuit conductor that is intentionally grounded (the neutral, on most systems).

> *Field note: Calling the grounded conductor a "ground wire" in a submittal note is a common terminology error that reviewers will flag — it's the neutral, not the EGC.*

Grounding Conductor

A conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode.

> *Field note: This is the broader umbrella term; the Grounding Electrode Conductor is the specific conductor that runs to the actual electrode (ground rod, water pipe, ufer, etc.).*

Grounding Electrode

A conducting object through which a direct connection to earth is established.

> *Field note: Concrete-encased electrodes ("Ufer grounds"), ground rings, and rod electrodes each have their own installation rules — confirm which one a project is actually relying on before assuming compliance.*

Grounding Electrode Conductor (GEC)

A conductor used to connect the system grounded conductor or the equipment to a grounding electrode or to a point on the grounding electrode system.

> *Field note: GEC sizing is table-driven off the largest ungrounded service conductor — a common error is sizing it off the panel's main breaker instead.*

Grounding Electrode, Rod / Pipe / Plate

Made electrodes driven into the earth (rod or pipe, minimum length/diameter set by the NEC) or buried in direct contact with soil (plate, minimum surface area), used when no qualifying electrode already exists on site.

> *Field note: Rod electrode resistance-to-ground testing (or the supplemental-electrode requirement) is a common missing test-report item on projects relying solely on driven rods instead of a concrete-encased electrode.*

Isolated Ground

An equipment grounding conductor arrangement that isolates a receptacle's grounding terminal from the metal raceway/box system, run back to a single point to reduce electrical noise on sensitive equipment.

> *Field note: An isolated ground receptacle still requires the normal EGC path — it's an added noise-reduction conductor, not a substitute for standard grounding, a distinction that trips up submittals regularly.*

Main Bonding Jumper / System Bonding Jumper / Supply-Side Bonding Jumper

Main Bonding Jumper: connects the grounded conductor to the equipment grounding conductor at the service. System Bonding Jumper: the same connection at a separately derived system. Supply-Side Bonding Jumper: a bonding conductor installed on the supply side of a service or separately derived system's disconnect/OCPD.

> *Field note: Only one of these bonding connections is supposed to exist per system — a second, unintended neutral-to-ground bond downstream (a "double bond") creates parallel neutral current paths and is one of the more serious and harder-to-find field defects.*

Neutral Conductor

The conductor connected to the neutral point of a system that is intended to carry current under normal conditions.

> *Field note: Not every grounded conductor is a neutral — a neutral specifically connects to a system's neutral point, which matters on corner-grounded delta systems.*

Neutral Point

The common point on a wye-connected system, or the midpoint on a single-phase, 3-wire system, that is intended to carry current under normal conditions.

> *Field note: Corner-grounded delta systems have no neutral point at all — knowing this prevents a bad assumption about where the grounded conductor originates.*

Patient Equipment Grounding Point

A jack or terminal that serves as the collection point for redundant grounding of electrical appliances serving a patient care vicinity, or for grounding other items in the patient vicinity.

> *Field note: Missing or mislocated patient equipment grounding points are a common finding on hospital/surgical-suite electrical rough-in inspections and are treated as life-safety deficiencies, not cosmetic ones.*

Reference Grounding Point

The ground bus of the panelboard or isolated power system panel serving a patient care space, established as the reference point for equipment grounding conductors in that area.

> *Field note: Verifying every branch-circuit EGC in a patient care space actually lands on the correct reference grounding point (not just any nearby ground bus) is a specific health-care electrical inspection check, not a general one.*

Separately Derived System

A premises wiring system whose power is derived from a source (transformer, generator, converter) with no direct electrical connection to the supply conductors of another system.

> *Field note: Every separately derived system needs its own system bonding jumper and grounding electrode connection — treating a transformer secondary like it's still bonded through the primary is a common and serious grounding error.*

Ungrounded

Not connected to ground or to a conductive body that extends the ground connection.

> *Field note: "Ungrounded conductor" is the code's formal term for what tradespeople usually call a "hot" — useful to know when reading a plan note literally.*

Circuits & Feeders

Branch Circuit

The conductors between the final overcurrent device protecting the circuit and the outlet(s).

> *Field note: Everything downstream of the last breaker or fuse is branch-circuit wiring — that boundary is what triggers different conductor, box-fill, and load rules.*

Branch Circuit, Appliance

A branch circuit supplying outlets for one or more appliances, with no permanently connected luminaires that are not part of an appliance.

> *Field note: Kitchen small-appliance and laundry circuits are the classic examples — they carry their own dedicated load and receptacle-count rules.*

Branch Circuit, General-Purpose

A branch circuit that supplies two or more receptacles or outlets for lighting and appliances.

> *Field note: Mixing lighting and general receptacles on the same circuit is normal here — it's the multi-use, catch-all circuit type.*

Branch Circuit, Individual

A branch circuit that supplies only one piece of utilization equipment.

> *Field note: Dedicated circuits for a water heater, condensing unit, or dishwasher are individual branch circuits — no other loads may share them.*

Class 1, Class 2, Class 3 Circuits

Remote-control, signaling, and power-limited circuits classified by voltage and power limits, with Class 2/3 circuits limited enough that they don't need the same overcurrent protection, wiring methods, or separation rules as regular power wiring.

> *Field note: Mixing Class 2 low-voltage cable in the same box or raceway as line-voltage conductors without the proper separation is one of the most common low-voltage rough-in violations.*

Feeder

All circuit conductors between the service equipment, the source of a separately derived system, or other power supply source, and the final branch-circuit overcurrent device.

> *Field note: Feeder sizing, not branch-circuit sizing, is what usually gets flagged on a panel schedule when a sub-panel is undersized for its connected load.*

Feeder Tap

A set of conductors, smaller than the feeder they're connected to, permitted without full-size overcurrent protection at the tap point under specific length, ampacity, and enclosure conditions in NEC 240.21.

> *Field note: The 10-ft, 25-ft, and 25-ft-outside rules each have different distance, ampacity, and termination requirements — citing "tap rule" without specifying which one is an incomplete plan-review comment.*

Load Side

The conductors that extend from equipment toward the load, as opposed to the line side, which extends toward the power source.

> *Field note: Backfed breakers, GFCI protection scope, and tap-rule calculations all depend on correctly identifying which side of a device is the load side.*

Transformer Secondary Conductor

A conductor, other than a service conductor, connected to the secondary winding of a transformer and running to the first overcurrent device that protects it.

> *Field note: The transformer secondary conductor tap rules are one of the most-cited NEC calculation mistakes on mechanical/electrical-coordinated equipment feeds — length and ampacity both matter.*

Overcurrent Protection

Circuit Breaker

A device designed to open and close a circuit by nonautomatic means, and to open the circuit automatically on a predetermined overcurrent, without damage to itself when properly applied.

> *Field note: A breaker that trips repeatedly on a load it's rated for is a sign of a wiring fault, not a breaker problem — don't just upsize it.*

Coordination (Selective)

Localization of an overcurrent condition to restrict outages to the circuit or equipment affected, accomplished by choosing and setting protective devices so only the nearest upstream device opens.

> *Field note: Selective coordination studies are required for specific life-safety and emergency systems — a panel schedule without a coordination study behind it is incomplete for those circuits.*

Fault Current, Available

The largest amount of current capable of being delivered at a point on the system during a short-circuit condition.

> *Field note: Available fault current has to be documented (often via a utility letter or calculation) and checked against every device's interrupting/withstand rating downstream of the service — an increasingly common missing document on commercial submittals.*

Fuse

An overcurrent protective device with a circuit-opening fusible link that melts and opens the circuit when subjected to overcurrent.

> *Field note: Fuse class (RK1, RK5, J, T, etc.) and its interrupting rating matter as much as the amp rating — replacing a fuse with a same-amperage but wrong-class fuse can silently strip a system of its coordination and let-through protection.*

Interrupting Rating

The highest current at rated voltage that a device is intended to interrupt under standard test conditions.

> *Field note: Interrupting rating has to be checked against available fault current at that point in the system — a common gap on service equipment submittals that skip a fault-current study.*

Overcurrent

Any current in excess of the rated current of equipment or the ampacity of a conductor; may result from overload, short circuit, or ground fault.

> *Field note: Overcurrent is the umbrella term — overload, short circuit, and ground fault are three distinct causes with different protective device responses.*

Overcurrent Protective Device, Supplementary

A device intended to provide limited overcurrent protection for specific applications and utilization equipment, such as internal circuits of an appliance, not intended as a substitute for branch-circuit overcurrent protection.

> *Field note: Supplementary protective devices (like the small fuses inside a piece of equipment) cannot be counted toward a circuit's required branch-circuit overcurrent protection — a common confusion when reviewing manufacturer equipment schematics.*

Overload

Operation of equipment in excess of normal, full-load rating, or of a conductor in excess of rated ampacity, that when it persists for a sufficient length of time could cause damage or dangerous overheating; a fault, such as a short circuit or ground fault, is not an overload.

> *Field note: Overload protection (thermal, for motors) and short-circuit/ground-fault protection are sized and selected differently — motor circuits typically need both.*

Overload Relay / Thermal Protector

Overload Relay: a device operative on excessive current, but designed to trip before damage occurs, that opens a motor's control circuit rather than the power circuit directly. Thermal Protector: a protective device assembled as an integral part of a motor, responding to motor temperature.

> *Field note: Overload relays protect the motor from sustained overcurrent; they are not a substitute for the branch-circuit short-circuit/ground-fault device — motor circuits typically need both types of protection working together.*

Series Rating / Short-Circuit Current Rating (SCCR)

Series Rating: a listed combination of specific overcurrent devices that can be applied at available fault currents higher than the interrupting rating of the downstream device alone, verified by testing. SCCR: the maximum fault current an assembly can safely withstand.

> *Field note: Series-rated combinations are only valid for the exact tested combination the manufacturer listed — field-substituting a different downstream breaker voids the series rating and can leave equipment under-protected at its actual fault current.*

Withstand Rating

The maximum current, at a given voltage and power factor/duration, that equipment can carry without sustaining damage, distinct from its interrupting rating.

> *Field note: Withstand rating and interrupting rating are two different numbers that both have to clear the available fault current — a device can have an adequate interrupting rating but still fail if its bus withstand rating is exceeded.*

Occupancy

Agricultural Building

A structure designed and constructed to house livestock or agricultural equipment/supplies, with combustible dust, corrosive atmosphere, and washdown conditions common.

> *Field note: Agricultural buildings drive specific corrosion-resistant equipment and equipotential-plane (livestock area) bonding requirements that a standard commercial spec doesn't include by default.*

Ambulatory Health Care Occupancy

A building or portion used to provide services to four or more patients at the same time, who are rendered incapable of self-preservation due to anesthesia, sedation, or physical/cognitive limitation.

> *Field note: Ambulatory (outpatient) surgical centers and similar spaces often get mistakenly treated as ordinary business occupancy — confirm patient-incapacitation criteria carefully, since it's what actually triggers health-care-facility electrical rules.*

Clothes Closet

A nonhabitable room or space intended primarily for storage of garments and apparel.

> *Field note: Clothes closets drive specific luminaire-type and clearance-to-storage-space rules — a recessed can light with the wrong clearance in a closet is a routine residential redline.*

Dwelling Unit / One-Family / Two-Family / Multifamily Dwelling

Dwelling Unit: a single unit providing complete independent living facilities (cooking, sanitation, sleeping). One-family: one dwelling unit. Two-family: two units. Multifamily: three or more units.

> *Field note: Small-appliance, laundry, and AFCI/GFCI requirements are written around "dwelling unit" — misclassifying a live-work or mixed-use space skips required protection.*

Fountain

Fully or partially constructed decorative water features, including splash pads, ornamental pools, and reflection pools, that are not intended for swimming or wading.

> *Field note: Fountains still require GFCI protection and bonding for their pumps and underwater luminaires even though nobody swims in them — a common scope-exclusion error on landscape/hardscape electrical.*

Garage (Commercial)

A building or portion of a building in which one or more self-propelled vehicles are kept for storage, repair, exhibition, or sale.

> *Field note: Commercial garage occupancy classification pulls in hazardous-location rules for portions of the space near vehicle exhaust/fuel systems that a general parking-structure design might not anticipate.*

Guest Room / Guest Suite

An accommodation combining living, sleeping, sanitary, and (for a suite) storage/cooking facilities within a hotel, motel, or similar building.

> *Field note: Guest room/suite classification pulls in dwelling-unit-like receptacle and AFCI requirements that a straight "commercial" classification would miss.*

Health Care Facilities

Buildings or portions of buildings in which medical, dental, psychiatric, nursing, obstetrical, or surgical care is provided.

> *Field note: Health care facility classification pulls in essential-electrical-system, isolated-power, and equipment-grounding-point requirements that don't apply to a typical commercial office — confirm classification early, not at final inspection.*

Location, Anesthetizing

Any space designated for the administration of any flammable or nonflammable inhalation anesthetic in the course of examination or treatment, including relevant induction rooms.

> *Field note: Anesthetizing locations historically drove hazardous-location electrical rules when flammable anesthetics were common — most modern facilities use nonflammable agents, but confirm the specific gases in use before assuming standard wiring methods apply.*

Machine Room

An enclosed space outside a hoistway or elevator car containing machinery, controllers, or other elevator/lift equipment.

> *Field note: Machine room dedicated-circuit, lighting, and disconnect-location requirements are elevator-code-adjacent items that a general electrical submittal can easily miss if elevator scope wasn't coordinated.*

Manufactured Home

A factory-built structure built to the federal HUD manufactured home standard, transportable in sections, designed for use as a dwelling with permanent chassis.

> *Field note: Manufactured homes follow a distinct feeder/service-entrance article from site-built dwellings — treating one like the other on a permit set is a common misapplication.*

Marina

A facility, generally on the waterfront, that stores, services, fuels, or sells boats, or provides dockage or storage for five or more boats.

> *Field note: Marina power outlets and shore power connections have their own ground-fault-protection threshold (30 mA) that's far more sensitive than a standard GFCI receptacle — a frequent gap on marina electrical retrofits.*

Mobile Home Park / Lot

Park: a contiguous parcel of land used for mobile home sites. Lot: a designated portion of that parcel intended for the exclusive placement of one mobile home and its accessory structures.

> *Field note: Mobile home park electrical distribution has its own demand-factor and service-per-lot calculation table distinct from both dwelling-unit and RV-park rules — using the wrong table is a common utility-side calculation error.*

Motor Fuel Dispensing Facility

That portion of a property where motor fuel is stored and dispensed from fixed equipment into the fuel tanks of self-propelled vehicles or approved containers.

> *Field note: The classified-location boundary around a dispenser (both radius and height) drives where ordinary electrical equipment is even allowed to be installed — a common canopy-lighting and signage coordination issue.*

Nurses Station

A space intended to provide a center of nursing activity for a group of patients, where patient monitoring, medications, and staff communication typically occur.

> *Field note: Nurses stations often carry Category 2 or higher patient-care-space electrical requirements even though no direct patient contact occurs there — a common under-classification on health care electrical submittals.*

Nursing Home

A building or portion of a building used for the lodging, boarding, and nursing care of four or more persons, on a 24-hour basis, who because of mental or physical incapacity may be unable to provide for their own needs and safety.

> *Field note: Nursing home occupancy pulls in essential electrical system and emergency lighting requirements similar to (but not identical to) a hospital — verify the exact occupancy sub-classification before assuming hospital-grade requirements apply wholesale.*

Park Trailer

A recreational-vehicle-type unit built on a single chassis, mounted on wheels, primarily designed to provide seasonal or temporary living quarters, connected to utilities for site-dependent support systems.

> *Field note: Park trailers sit between RVs and manufactured homes in classification — confirm which specific NEC article a site's units actually fall under before applying either RV-park or dwelling-unit service rules.*

Patient Care Space Category

A classification (Category 1-4) of spaces within a health care facility based on the impact of an electrical system failure on patients and staff.

> *Field note: Receptacle count, redundant branch circuits, and equipment grounding point requirements all scale with patient care space category — getting the category wrong cascades into every downstream calculation.*

Performance Area / Stage

The stage and audience seating area of a theater, television/film studio, or similar space used for performances, including any area used by performers.

> *Field note: Stage/performance-area wiring methods (flexible cords, portable switchboards) are permitted in ways that would be non-compliant anywhere else in the building — don't apply a general commercial wiring checklist to stage electric.*

Pool, Immersion

A pool used for ceremonial or religious purposes, or for physical therapy, that is not intended for swimming or recreational bathing.

> *Field note: Immersion pools still fall under the pool-bonding and GFCI articles even though they're not recreational — a common scope-exclusion mistake in health-care and worship-facility submittals.*

Pool, Permanently Installed

A pool constructed in the ground, partially in the ground, or above ground, and designed to hold water at a depth greater than 42 in. and to remain in place year-round.

> *Field note: Permanently installed pools require full equipotential bonding grid coverage — the single most commonly missed item on residential pool electrical inspections.*

Pool, Storable

A pool with a maximum water depth of 42 in., or a maximum wall height of 42 in. above grade regardless of depth, that can be disassembled for storage.

> *Field note: Storable pools still trigger GFCI-protection requirements for pumps and any nearby receptacles — "storable" affects the bonding requirement, not the shock-protection requirement.*

Portable Structures

Units designed to be moved, including trailers, and used for offices, sales, or similar purposes at a temporary or semi-permanent site.

> *Field note: Portable structures on a construction site frequently get powered via temporary feeder taps that were never re-verified once the structure became semi-permanent — a common finding on long-duration job-site trailers.*

Psychiatric Hospital

A building used exclusively for the psychiatric care of four or more inpatients on a 24-hour basis.

> *Field note: Psychiatric hospital electrical scope includes tamper-resistant/ligature-resistant device and fixture considerations beyond standard NEC receptacle rules — coordinate closely with the architect's behavioral-health design standard, not just code minimums.*

Recreational Vehicle / RV Park / RV Site

A vehicular unit primarily designed for recreational camping or travel use, and the parcels of land (park) or specific areas (site) developed for RV parking with utility connections.

> *Field note: RV site supply equipment has its own demand-factor table separate from dwelling-unit calculations — using residential demand factors on an RV park service calc will undersize the service.*

Spa, Permanently Installed / Portable (Hot Tub)

A hydromassage pool or tub, permanently installed or listed as self-contained/portable, not designed to have its water discharged after each use.

> *Field note: Portable spas rely on their listing's built-in bonding and GFCI protection — a permanently installed spa needs the full pool-bonding treatment, so the classification decision drives the whole electrical scope.*

Vending Machine

Self-service equipment that dispenses products or services, wholly or partly automatically, upon insertion of a coin, paper currency, token, card, or key, or by direct payment of any kind.

> *Field note: Vending machines are one of the most common sources of unreported cord-and-plug loads in a tenant fit-out's electrical calc — always confirm actual equipment counts on site, not just the plan set.*

Work Surface

A fixed, stationary, or portable surface used to support work activities, typically in an office furniture or systems-furniture layout.

> *Field note: Work-surface receptacle/outlet requirements in open-office systems furniture are frequently coordinated wrong between the furniture vendor's power whip and the base building circuit — verify counts against actual submitted furniture plans.*

Service Equipment

Service

The conductors and equipment connecting the serving utility to the wiring system of the premises served.

> *Field note: "Service" is the boundary between the utility's system and the premises wiring — everything on the customer's side of that boundary is governed by the full body of the NEC, not just utility rules.*

Service Conductors

The conductors from the service point to the service disconnecting means.

> *Field note: Service conductors have different ampacity and protection allowances than feeder or branch-circuit conductors — confirm which segment of run you're actually looking at before applying a table.*

Service Drop

The overhead conductors between the utility electric supply system and the service point.

> *Field note: Service drop clearances over roofs, decks, and pools are a recurring field issue on renovation projects with new rooftop equipment.*

Service Equipment

The necessary equipment, generally consisting of a circuit breaker(s) or switch(es) and fuse(s) and their accessories, connected to the load end of service conductors and intended to constitute the main control and cutoff of the supply.

> *Field note: Service equipment is where the required disconnect, bonding, and grounding-electrode-system rules all converge — arguably the single most scrutinized point on a plan review.*

Service Head (Weatherhead)

A fitting installed at the top of a service raceway or service cable to keep water from entering the service-entrance conductors while allowing conductors to exit for connection to the service drop.

> *Field note: A cracked or improperly oriented weatherhead is a routine cause of water intrusion into meter equipment — a quick visual check most reviewers make before anything else on an overhead service.*

Service Lateral

The underground conductors between the utility electric supply system and the service point.

> *Field note: Underground service laterals shift the burial-depth and physical-protection conversation compared to overhead drops — relevant on sites with parking, driveways, or landscaping above the run.*

Service Point

The point of connection between the facilities of the serving utility and the premises wiring.

> *Field note: Everything upstream of the service point belongs to the utility; everything downstream is the owner's responsibility under the NEC — the exact split is usually spelled out in the utility's service rules.*

Service-Entrance Conductors

The service conductors between the terminals of the service equipment and a point usually outside the building, clear of building walls, where joined by tap or splice to the service drop or service lateral.

> *Field note: Overhead vs. underground service-entrance conductors have different sizing, protection, and routing rules — confirm which type before reviewing conduit routing.*

Substation

An assemblage of equipment — switches, interrupting devices, transformers — through which electric energy is passed for distribution, transmission, or transformation.

> *Field note: Owner-side substations blur the line between "utility" and "premises" equipment — confirm exactly where utility responsibility ends before assuming NEC rules apply to a given piece of gear.*

Supervised Industrial Installation

Portions of an industrial facility where conditions of maintenance and supervision ensure only qualified persons monitor and service the installation, and where the industrial process is served by 2500 kVA or more of transformer capacity.

> *Field note: This classification unlocks relaxed service-disconnect and overcurrent-protection allowances not available to typical commercial facilities — verify the site genuinely meets both the qualified-supervision and capacity thresholds*

> *before relying on the relaxed rules.*

Need this checked against your project?

For a determination tied to your drawings, equipment schedule, or AHJ, contact Masterbuild Consulting at osmany.portal@masterbuildconsulting.com or masterbuildconsulting.com.