2022 California Electrical Code (CEC) Changes

SUMMARY

The major changes in the 2022 CEC code cycle include: extensive addition of GFCI and tamper resistant requirements in single family and non-residential occupancies, many restrictions on reconditioned equipment, additional barriers to be provided in service panels, switchboards, switchgears, and disconnects to protect from live parts, surge protection for dwelling units, and label/marking changes/additions.

SIGNIFICANT CHANGES

NEW ·	- CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY	MAS PLAN IN YES	TER MPACT - NO
		90.2(A)(6)	New list item to clarify that installations used to export power from vehicles is under the scope of the NEC.		\boxtimes
	\boxtimes	Chapter 1 Definitions	Habitable Room. Definition added for consistency.		\boxtimes
		- Chapter 1 Definitions	Accessory Dwelling Unit. Definition added		\boxtimes
	\boxtimes	110.22	Disconnects in other than one and two family dwellings shall have the circuit source on the label		\boxtimes
		110.26(E)(2)	Egress on both ends of spaces with equipment disconnects that have a combined amp rating of 1200 and over 6' in width. Equipment doors shall not block entry/egress.		
		110.32	Revision to require both minimum width and height as conditions where energized parts are exposed. New provisions added for other equipment permitted in the workspace, prohibited storage, and guarding of live parts.		
	\boxtimes	200.3	Clarification of applicability of connection to grounded system.		\square
	\boxtimes	200.6(A)(5)	Recognizes single conductor cables for PV systems.		\boxtimes
	\boxtimes	210.8	Clarification on measuring distance from receptacles ('the shortest distance').		
		210.8(A)	GFCI protection requirements greatly expanded. Now single phase, 125v-250v, receptacles greater than 15 and 20 amp, supplied by single phase branch circuits rated 150 volts or less to ground, also require GFCI protection (in locations identified in this section).		
	\boxtimes	210.8(A)(5)	GFCI protection expanded to cover all basements.		\square

		CEC SECTION/TABLE			STER MPACT
NEW	- CHANGE	NUMBER	COMMENTARY	YES	- NO
		210.8(A)(11)	GFCI protection expanded to indoor damp and wet locations.		
		210.8(B)	GFCI protection requirements greatly expanded. Now all $125v-250v$ receptacles supplied by single phase branch circuits rated 150v or less to ground, 50 amps or less and three-phase receptacles 100 amps or less, installed in locations outlined by the section shall be GFCI protected (210.8(B)(1)-(B)(12)).		
	\boxtimes	210.8(B)(2)	GFCI protection requirements expanded to include areas with a sink and permanent provisions for either food preparation or cooking.		
	\boxtimes	210.8(B)(11)	GFCI protection required in Laundry areas.		\boxtimes
	\boxtimes	210.8(B)(12)	GFCI protection required within 6 'of outside edge of bathtub or shower stall.		\boxtimes
	\boxtimes	210.8(E)	GFCI protection required for receptacles for maintenance receptacles required by 210.63.		\square
		210.8(F)	GFCI protection required for outdoor outlets for dwellings that are supplied by a single-phase branch circuits rated 150 volts to ground or less, 50 amps or less.		
		210.11(C)(3)	GFCI receptacles required for any countertop and similar work surface in a bathroom.		
	\boxtimes	210.12(C)	AFCI protection required for guest suites, and patient sleeping rooms in nursing homes and limited-care facilities.		\boxtimes
	\boxtimes	210.12(D)	AFCI protection for extension or modifications to dormitory units, and guest rooms and guest suites.		\square
	\boxtimes	210.52(C)	Countertop receptacles may not serve as the outlets required to serve wall spaces.		
	\boxtimes	210.52(C)(2)	Additional receptacle required for every 18 square feet (or fraction greater than) more than 9 square feet of island or peninsula.		
	\square	210.52(E)(3)	Balconies, decks, and porches within 4" horizontally of the dwelling unit shall be provided with a receptacle.		
		210.63	Requirement to provide service receptacles expanded to include equipment requiring servicing, including indoor equipment (in addition to heating, air-conditioning, and refrigeration equipment).		
	\boxtimes	210.65	Meeting room receptacle requirements clarified.		\boxtimes

		CEC		MAS	STER
NEW	- CHANGE	SECTION/TABLE	COMMENTARY	PLAN I	MPACT
		220.12(B)	Options for calculating lighting load.		<u>- NO</u>
	\boxtimes	220.87	Services with renewable energy sources may not use annual demand to calculate existing loads.		\boxtimes
		225.30(B)	New allowance to permit multiple feeders where they originate in the same supply equipment and terminate in separate disconnecting means.		
		230.46	Devices shall be listed as "suitable for use on the line side of the service equipment" or equivalent when spliced or tapped on the line side.		
		230.62(C)	Service equipment is not required to have a Barrier inside so that no uninsulated, ungrounded service bus bar or service terminal is exposed to inadvertent contact by persons or maintenance equipment while servicing load terminations.		
		230.67	Surge protection device (SPD) required for all services supplying dwelling units. This requirement applies to service equipment replacement.		
	\boxtimes	230.71	More stringent requirements for allowing more than one disconnect.		\square
	\boxtimes	230.82	Changes to allowed equipment on the supply side of the service disconnect.		
		230.85	One and two family dwellings shall have a disconnecting means having a short circuit rating equal to or greater the available fault current. If more than one disconnect is provided they shall be grouped. New labeling requirements.		
	\boxtimes	240.6(C)	New restricted access provisions for adjustable breakers (passwords allowed).		\boxtimes
	\boxtimes	240.67	Documentation required for method for clearing time of arc faults for services over 1200 amps.		\square
	\boxtimes	240.87	Arc flash reduction methods, documentation, and testing requirements for services over 1200 amps.		\boxtimes
	\boxtimes	240.88	Reconditioned breakers not permitted.		\boxtimes
		242	General requirements for overvoltage protection requirements including Surge Protection Devices (SPD) and surge arrestors.		
	\boxtimes	250.25	Grounding systems permitted to be connected to the supply side of disconnects.		

		CEC		MAS	STER
NEW	- CHANGE	SECTION/TABLE	COMMENTARY	PLAN I YES	- NO
	\boxtimes	250.53(c)	Rebar not permitted to be used as a conductor to interconnect the electrodes of the grounding electrode system.		
	\boxtimes	250.64(A)	Grounding electrode conductor installation requirements for Aluminum or Copper-Clad Aluminum conductors.		\boxtimes
	\boxtimes	250.66(C)(3)	Requirements for extensions of rebar grounding electrodes.		\boxtimes
	\boxtimes	250.104	Maximum size bonding conductors added		\boxtimes
		250.109	Metal enclosures permitted to connect bonding jumpers or equipment grounding conductors.		\boxtimes
	\boxtimes	250.120(B)	Requirements for Aluminum and Copper-Clad Conductors used as equipment grounding conductors to protect from corrosion.		\boxtimes
	\boxtimes	300.45	Change Warning sign to 'DANGER'		\boxtimes
	\boxtimes	310	Section re-organized and small changes throughout.		\boxtimes
	\boxtimes	314.27	Outlet boxes mounted in ceilings of habitable rooms of dwelling shall be listed for the sole support of ceiling fans with required structural support.		
		320.80(A)	Adjustment factors for type AC cable with draft stopping materials that do not maintain required spacing.		
		330.104	New requirement to cover cables used in hazardous (classified) locations.		\square
	\boxtimes	334.30	Maximum of 18" of "looped" cable from box to first staple.		\boxtimes
		337	New requirement to cover cables used in hazardous (classified) locations.		\boxtimes
\square		342.10	IMC permitted where exposed to severe physical damage.		\boxtimes
	\boxtimes	342.14	Dissimilar metals: permitted fittings and enclosures for use with galvanized or stainless.		\square
	\boxtimes	344.14	Dissimilar metals: permitted fittings and enclosures for use with galvanized or stainless.		\boxtimes
	\boxtimes	380.12(7)	Multi-outlet assembly not permitted where cord and plug connected.		\boxtimes
	\boxtimes	406.4(D)(7)	Controlled receptacles that are replaced shall have marking to identify them as such.		\square
		406.5(G)(2)	Receptacles shall not be installed face up in or on countertop surface unless listed, and shall not be installed in this position under sinks.		

		CEC SECTION/TABLE		MAS PLANI	STER MPACT
NEW	- CHANGE	NUMBER	COMMENTARY	YES	- NO
		406.9(C)	Receptacles shall not be installed within 3' horizontally and 8' vertically of the top of a tub or shower rim.	\square	
		406.12	Tamper resistant receptacles now required in dwelling unit attached and detached garages and accessory dwelling units as well as common areas of multifamily dwellings. Also motels and their common areas, dormitory units, and assisted living units.		
		406.13	Single pole separable connector requirements.		\boxtimes
	\boxtimes	408.4	Alternate circuit director locations permitted.		\boxtimes
		408.6	Short circuit current ratings of switchboard labels (shall include date calculated).		\square
		408.8	Panel boards not permitted to be reconditioned. Provisions for switchgear reconditioning.		\boxtimes
		408.18(C)	Requirements for switchboards and switchgears with side or rear access.		\boxtimes
		408.36	Panel boards shall not be permitted to be installed in the face up position. Multiple Service Disconnects cannot be located within the same enclosure.		\boxtimes
		410.7	Luminaire, lamp holders, and retrofit kits shall not be permitted to recondition.		
		410.69	Control conductor insulation not permitted to be white/grey or green.		\boxtimes
		410.118	Luminaires recessed in ceilings floors or walls shall not be used to access outlet, pull, or junction boxes or conduit bodies, unless the box or conduit is an integral part of the fixture.		
\square		410 Part XVI	Horticultural Lighting Equipment requirements.		\boxtimes
		422.3(A)	In single family buildings that include one and two Dwellings, each dwelling shall provide: Circuits and circuit identifications for electric cooktops and dedicated circuits and circuit identifications for electric clothes dryers.		
		422.3(B)	Dwellings in Multi-family dwelling shall provide: Dedicated Circuits and circuit identifications for electric cooktops and dedicated circuits and circuit identifications for electric clothes dryers.		
	\boxtimes	422.5(A)	GFCI protection for appliances expanded to include bottle fill stations, cord and plug connected high-pressure spray machines, sump pumps, and dishwashers.		\boxtimes
		422.16(B)(2)	Flexible cords for Built in Dishwashers and Trash Compactors passing through an opening shall be		

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NEW	- CHANGE	NUMBER	COMMENTARY	YES	- NO
			protected against damage by a bushing, grommet, or other approved means.		
	\boxtimes	440.9	Compression-type fittings required on roof mounted equipment with wire type equipment ground in conduit.		\boxtimes
		445.6	Stationary generators 600 volts and less shall be listed. Custom generators shall be field labeled by a field evaluation body.		\boxtimes
	\boxtimes	445.18(C)	Remote Emergency Shutdown required for generators greater than 15 kw.		\square
	\boxtimes	445.18(D)	Emergency Shutdown device required outside for generators in one and two family dwellings.		\square
		450.9	Label required on tops of readily accessible transformers to state, not for storage.		\square
		480.7(B)	"EMEGENCY DISCONNECT" labeling requirements for one and two family dwellings required.		
		480.7(G)	Plagues or directories required in facilities with battery systems and utility service.		
		511.12	GFCI protection required for 15 and 20 amp receptacles installed in non-dwelling unit garages, service bays, and similar areas.		\boxtimes
		514.11(A)	Emergency controls for fuel dispensers shall disconnect simultaneously all conductors of the circuits including the grounded conductor (neutral). Equipment ground shall remain connected.		
	\boxtimes	517.16	Isolated ground receptacles shall not be installed in a patient care vicinity, but are permitted in a patient care space.		\boxtimes
		518.6	Illumination required to be provided for all working spaces about fixed service equipment switchboards, panelboards, or motor control centers outdoors that serve assembly occupancies. Control by automatic means not permitted.		
		600.4(D)	Markings on signs and outline lighting systems are not required to be visible prior to servicing after installation.		
		600.5(B)	New requirement covering the marking of signs and outline lighting disconnecting means.		\boxtimes
		620.6	Sump pumps in elevator pits and similar locations: shall be permanently wired or provided with a GFCI protected receptacle.		
		620.65	Elevators with Selective Coordination: New labeling requirements.		\boxtimes

		CEC SECTION/TABLE		MAS PLAN II	TER
NEW	- CHANGE	NUMBER	COMMENTARY	YES	- NO
		625.54	ALL Receptacles for Electric Vehicles Charging: shall be GFCI protected.		
		625.56	Receptacles for Electric Vehicles Charging: installed in wet locations shall be provided with an enclosure that is weatherproof with the attachment plug cap inserted or removed (extra duty required).	\boxtimes	
\boxtimes		680.2	Splash Pad defined		\boxtimes
		680.9(A)	Overhead Power Conductor Clearances: clarifies that this includes other conductors besides service entrance conductors.		
		680.11	Underground wiring and swimming pools: Wiring under pools not permitted unless it serves the pool.		\boxtimes
		680.21(C)	GFCI (class A) Protection for pool motors: rated 150 amps to ground or less and 60 amps or less, single or 3 phase. Certain low voltage motors exempt.		
		680.21(D)	Pool Motor Replacement: GFCI protection required to be upgraded when pool motor replaced.		\boxtimes
		680.22(A)(5)	Pool Equipment Rooms: Shall be provided with at least one GFCI protected receptacle and all other receptacles rated 150 volts to ground shall be GFCI protected.		
		680.22(E)	Other equipment in close proximity to pools: if exceeding low voltage allowances shall be a minimum of 5' away or a permanent barrier provided.		
	\boxtimes	680.26(B)(2)(c)	Revision to allow copper grid as alternative for bonding perimeter surface.		\boxtimes
	\boxtimes	680.26(B)(5)	Exceptions for pool cover anchoring bonding requirements added.		\boxtimes
		680.59	GFCI protection for permanently installed non-submersible pumps: Outlets supplying motors rated 250 volts or less and 60 amps or less, single of 3 phase shall be GFCI protected.		
	\boxtimes	680.84	GFCI protection for Switching devices and receptacles for electrically operated pool lifts shall be GFCI protected.		\boxtimes
	\boxtimes	690.4(B)	PV System equipment: Additional equipment required to be listed and have field label applied		
	\boxtimes	690.8(A)	Maximum Current for Specific PV circuits	\square	
	\boxtimes	690.12	Rapid Shutdown of PV Systems: extensive revision	\square	
	\boxtimes	690.13(A)	Photovoltaic System Disconnecting Means: if above 30 volts to have cover requiring locked cover or tools to open.		

		CEC		MAS	TER
NEW	- CHANGE	SECTION/TABLE NUMBER	COMMENTARY	PLAN I YES	MPACT - NO
		695.3(C)(3)	Selective Coordination for Fire pumps at multi-building campus style complexes: designed by a professional engineer, with some exceptions.		
	\boxtimes	705.10	Identification of Power Sources: "CAUTION MUTIPLE SOUCES OF POWER" signage requirements.		\square
		705.13	Power Control Systems (PCS): New section of requirements for Power Control Systems.		\boxtimes
	\boxtimes	705.20	Disconnecting Means for power production sources: specific types of disconnecting means codified.		
	\boxtimes	706.1	Energy Storage Systems (ESS): article limited to systems with greater than 1 kWh capacity.		\boxtimes
	\boxtimes	706.4	Nameplate requirements for ESS		\boxtimes
		706.15	ESS disconnecting means requirements: shall be permanently marked "ENERGY STORAGE SYSTEM DISCONNECT".		\boxtimes