

**DEVELOPMENT SERVICES – BUILDING INSPECTION****INSPECTION GUIDELINES:
ELECTRICAL SIGNS****INSPECTION CODE: 101****SCOPE: COMMERCIAL****APPLICABLE CODES:** 2016 CBC, CRC, CPC, CMC, CEC, CALGreen, CEnC, and PAMC

The information provided in this document is general and intended as a guide only. Each project is unique and additional requirements may be enforced as deemed appropriate.

WARNING

Failure to complete the items below prior to inspection may result in a re-inspection fee.

PRE-INSPECTION

- ☐ Make sure that the approved plans and permit are on site, accompanied by the manufacturer's installation instructions for signs, power supplies/transformers and mounting specifications. (CEC 600.3 & CBC Ch. 1)
- ☐ Before the inspection, the contractor shall ensure that access is provided to signs and electrical panel. (Provide a boom truck if it is not accessible by ladder.)

INSPECTION

- ☐ All abandoned and unused wiring and equipment shall be removed. (CEC 725.25)
- ☐ Verify that the signs are mounted per the manufacturer's specifications and/or details. (CEC 110.3 (B)) For any signs that weight over 400 lbs., check the Structural Drawings for details.
- ☐ Each entrance for all tenant space shall be provided with at least one outlet in an accessible location. No other loads are allowed on this circuit. (CEC 600.5(A))
- ☐ Check that a dedicated circuit for the sign was provided. (CEC 600.5 (B)(1) & (2))
 - The circuit shall not exceed 20A for incandescent and fluorescent signs.
 - The circuit shall not exceed 30A for neon tubing installations.
- ☐ Signs and retrofit kits shall be listed, provided with installation instructions and installed in accordance with its listing.
- ☐ Verify that all sign circuits are labeled at the electrical panel.
- ☐ Signs shall be marked with the manufacturer's name or trademark, input voltage and current rating. (CEC 600.4(A))

- ☐ Signs shall be visible after installation and shall be permanent, durable, and, when installed in wet locations, water-proof. (CEC 600.4(C) & (D))

DISCONNECTS

- ☐ When branch circuit is not routed through a listed raceway per Chapter 3, the disconnect for a sign shall be located at the POINT OF ENTRY to the sign enclosure. CEC 600.6(A)(1)
- ☐ A disconnect must be provided within sight of the sign or controller. Where the disconnect is not within sight of the sign, a lockable disconnect shall be installed. The disconnect must be lockable in accordance with 110.25. (The lock must meet OSHA's requirements.) (CEC 600.6(A)(2) & (3))
- ☐ Bonding conductors shall be copper and not smaller than 14 AWG. Bonding conductors shall be protected when installed outside the sign or raceway. (CEC 600.7 (B)(7) (1) & (2))
- ☐ In wet locations, drain holes shall not be smaller than ¼" and not larger than ½". The drain holes shall be installed at every low point where there are not external obstructions. (CEC 600.9 (D))
- ☐ Signs and outline lighting systems shall be located 14' above areas accessible to vehicles unless protected from physical damage. (CEC 600.9 (A))

BALLASTS, TRANSFORMERS, AND ELECTRONIC POWER SUPPLIES

- ☐ Transformer and power supplies are required to have ground-fault protections and shall be marked. (CEC 600.23 (B), CEC 600.23 (F))
- ☐ Class 2 power supplies must be listed for use with electric signs or listed as a component of the sign. (CEC 600.24 (A))
- ☐ Where located in an attic, a lighting outlets at or near the equipment shall be provided. A wall switch shall be located at the point of entry. (CEC 210.70 (C))
- ☐ Where located in suspended ceiling, equipment must be secured but not secured to supports or suspended ceiling. Wiring must be hard wired. (Cord- and plug-connected transformers or power supplies are not permitted.) (CEC 600.21 (F))
- ☐ Ballast shall be identified for the use, be listed, and thermally protected. (CEC 600.22(A) & (B))

LOW-EMITTING DIODE (LED)

- ☐ All work shall be installed in a neat and work-man like manner. (CEC 725.24)
- ☐ Wiring methods and materials shall be installed in accordance with Chapter 3 and Article 725, Part III. (CEC 600.33 (A))
- ☐ Class 2 cable installed in wet locations and shall be identified as suitable for wet locations. (CEC 600.33 (A)(1))

- ☐ Conductors shall be protected from physical damage they shall be protected in accordance with 300.4. (CEC 600.33 (C))
- ☐ Where installed in plenums, wiring shall be plenum rated type CL2P or CL3P. (CEC 725.154 (A))
- ☐ Equipment installed in plenums shall be listed for that use. (CEC 300.22 (C)(3))
- ☐ Cables shall not be strapped or taped to the exterior of any conductor raceway. (CEC 725.143)
- ☐ Where cables are located 1.25" from framing or furring members, a 1/16" nail plate shall be installed. (CEC 600.33(B), CEC 300.4(D))
- ☐ Class 2 conductors shall be separated by Class 1 conductors and power conductors by a barrier. Where these conductors are installed in an enclosure, wiring shall be installed in a raceway. (CEC 725.136(A))
- ☐ Class 2 circuits and power circuits may be installed in the same enclosure if they are connected to the same equipment. (CEC 725.136 (D))
- ☐ Wiring shall not exceed 10' where installed in non-concealed spaces. (CEC 725.154 (E)(3))

NEON

- ☐ Where flexible metal conduit or listed liquidtight flexible conduit is used for protection of the secondary conductors, as well as a bonding means, the conduit shall not exceed 100ft. (CEC 600.7 (B)(4))
- ☐ Where nonmetallic conduit is used for the transformer secondary conductors, bonding is required. The bonding conductors shall be run on the outside of the nonmetallic conduit and be separated from the conduit by a distance of 1.5" when operated at 100HZ or less, and 1.75" when in excess of 100HZ. (CEC 600.6)
- ☐ All metallic parts smaller than 2" and not likely to become energized (minimum ¼" from neon tubing) shall not require bonding. (CEC 600.5)
- ☐ Secondary conductors shall not be smaller than 18 AWG. (CEC 600.31 (B))
- ☐ Bushings shall be installed where wires pass through metallic openings. (CEC 600.31 (E))
- ☐ Secondary conductors shall be kept as short as possible: (CEC 600.21 (B), CEC 600.32 (J)(1 & 2))
 - 20' when installed in metal conduit
 - 50' when installed in nonmetallic conduit
- ☐ Secondary wires shall be protected from damage. (CEC 600.31 (D))
- ☐ Verify secondary wires are at, or above, the transformer voltage.

!

- ☐ For neon signs overs 1000V, the secondary conductors shall be listed and approved for the voltage and temperature. (CEC 600.32 (B))
 - Example: Insulation type GTO
 - GTO-5 = 5,000V
 - GTO-10 = 10,000V
 - GTO-15 = 15,000V
- ☐ Secure neon tubing and conductor not more than 6" from connection. (CEC 600.41(B))
- ☐ Verify marking for transformer and electric power supply when required to have a ground fault protection. (CEC 600.23 (B))