



## CONTRACTORS STATE LICENSE BOARD LICENSE EXAMINATION STUDY GUIDE



### SIGN (C-45)

#### Content of the Examination

The Sign (C-45) Examination is divided into five major sections:

#### 1. Planning and Estimating (29%)

- Sign criteria and codes
- Plans and specifications
- Sign engineering and design
- Sign components
- Electrical requirements
- Material, labor, and equipment estimation

#### 2. Sign Design and Fabrication (22%)

- Sign patterns
- Sign face fabrication
- Channel and reverse channel letters
- Sign cabinet fabrication
- Sign assembly
- Fluorescent, LED, and HID fabrication
- Neon design and fabrication

#### 3. Sign Installation (21%)

- Prewiring of sign electrical components
- Excavation and concrete footings
- Pole and monument sign installation
- Building sign installation
- Electrical connections

#### 4. Testing, Maintenance, and Troubleshooting (11%)

- Sign testing and troubleshooting
- Sign repair and maintenance
- Tools and equipment

#### 5. Safety (17%)

- Electrical hazards
- Personal protective equipment
- Cal/OSHA safety requirements
- Hazardous materials
- Working with cranes and ladders
- Transportation and traffic control

*\*Percentages are approximate\**

#### Test Site Policy

This is a closed-book examination. No reference materials may be used during the examination. All materials brought to the examination site must be left in an unmonitored area at your own risk.

#### Test Strategy

This is a multiple-choice examination with four choices per question. Examination questions are written to provide only one BEST answer. Some questions require mathematical computation. A calculator will be provided.

There is no penalty for guessing. If you are unsure about a particular question, it is better to try to answer the question than to leave the question blank.

Plenty of time is provided to answer all examination questions, so be sure to read each question and its four choices completely and carefully before selecting the BEST possible answer to the question.

## Sample Questions

Below are three typical examination questions.  
The correct answer is underlined.

1. What is the advantage of using aluminum instead of sheet metal to fabricate channel letters?
  - a. It is less costly.
  - b. It is easier to paint.
  - c. It is more corrosion resistant.
  - d. It is UL approved.
2. Which screw has the greatest shaft diameter?
  - a. #6
  - b. 3/16"
  - c. #10
  - d. 1/4"
3. A contractor is required to run 197 feet of EMT to the location of the sign. How many pieces of EMT will be required?
  - a. 15
  - b. 19
  - c. 20
  - d. 25

*\*All questions are written and reviewed by licensed contractors who are actively working in the trade\**

## Resources

*Publisher information for reference books and code is provided below. Other sources for reference books may be found online.*

**California code books can be viewed online:**  
[www.dgs.ca.gov/bsc](http://www.dgs.ca.gov/bsc)

**2019 California Building Code.** California Code of Regulations, Title 24. International Code Council.

PHONE: (800) 786-4452  
INTERNET: [www.iccsafe.org](http://www.iccsafe.org)

**2019 California Electrical Code (especially Article 600).** California Code of Regulations, Title 24. BNI Publications, Inc.

PHONE: (888) 264-2665  
INTERNET: [www.bnibooks.com](http://www.bnibooks.com)

**2019 California Energy Code.** California Code of Regulations, Title 24. International Code Council.  
PHONE: (800) 786-4452  
INTERNET: [www.iccsafe.org](http://www.iccsafe.org)

**CalDAG 2017: California Disabled Accessibility Guidebook, An Interpretive Manual and Checklist.** Michael P. Gibbens.  
PHONE: (805) 870-0900  
INTERNET: [www.theaccessguy.com](http://www.theaccessguy.com)

**California Vehicle Code.** Department of Motor Vehicles.  
INTERNET:  
[leginfo.legislature.ca.gov/faces/codes.xhtml](http://leginfo.legislature.ca.gov/faces/codes.xhtml)

**Neon Installation Guide.** Northeast States Sign Association.  
PHONE: (800) 216-7446  
INTERNET: [www.neoninstallationguide.com](http://www.neoninstallationguide.com)

**State of California General Industry & Electrical Safety Orders (Cal/OSHA) and State of California Construction & Electrical Safety Orders (Cal/OSHA). 2019.** California Code of Regulations, Title 8. Mancomm.  
PHONE: (877) 626-2666  
INTERNET: [www.mancomm.com](http://www.mancomm.com)  
VIEW ONLINE:  
[www.dir.ca.gov/dosh/LawsAndRegulations.htm](http://www.dir.ca.gov/dosh/LawsAndRegulations.htm)

**Underwriters Laboratories (UL) 48: Standard for Electric Signs.** Comm 2000.  
PHONE: (888) 853-3503  
INTERNET: [www.shopulstandards.com](http://www.shopulstandards.com)

**Underwriters Laboratories (UL) 2161: Standard for Neon Transformers and Power Supplies.** Comm 2000.  
PHONE: (888) 853-3503  
INTERNET: [www.shopulstandards.com](http://www.shopulstandards.com)

*\*Publisher information is current as of 12/19\**