

## CONTRACTORS STATE LICENSE BOARD LICENSE EXAMINATION STUDY GUIDE



# <mark>SIGN (C-45)</mark>

### Content of the Examination

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

#### 1. Planning and Estimating (22%)

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

### 2. Sign Design and Fabrication (20%)

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

## 3. Sign Installation (26%)

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

#### 4. Testing, Maintenance, and Troubleshooting (16%)

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

- 5. Safety (16%)
  - Electrical hazards
  - Personal protective equipment
  - Cal/OSHA safety requirements
  - Hazardous materials
  - Working with cranes and ladders
  - Transportation and traffic control

\*Percentages are approximate\*

## **Test Policy**

This is a closed-book examination. No reference materials may be used during the examination.

## 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 marked with an asterisk (\*)

- 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. What is the square footage of a sign measuring 18 inches tall by 14 feet long?

a. 18 sq. ft.
b. 21 sq. ft.\*
c. 210 sq. ft.
d. 252 sq. ft.

\*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

**2022** California Building Code. California Code of Regulations, Title 24. International Code Council. PHONE: (800) 786-4452 INTERNET: www.iccsafe.org

2022 California Electrical Code (especially

*Article 600).* California Code of Regulations, Title 24. BNI Publications, Inc. PHONE: (888) 264-2665 INTERNET: www.bnibooks.com **2022 California Energy Code.** California Code of Regulations, Title 24. International Code Council. PHONE: (800) 786-4452 INTERNET: www.iccsafe.org

**California Vehicle Code.** Department of Motor Vehicles. INTERNET: leginfo.legislature.ca.gov/faces/codes.xhtml

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

State of California General Industry & Electrical Safety Orders (Cal/OSHA) and State of California Construction & Electrical Safety Orders (Cal/OSHA). 2024. California Code of Regulations, Title 8. Mancomm. PHONE: (877) 626-2666 INTERNET: mancomm.com VIEW ONLINE: 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

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

\*Publisher information is current as of 3/24\*