American Electrical Institute

CONTINUING EDUCATION FOR FLORIDA ELECTRICIANS

FLORIDA 4 HOUR SPECIALTY COURSE

Course # 0802231

Business Practices for Florida Electricians:
Sales and Use Tax ▪ 1 Hour

Workers' Compensation:
A Drug-Free Workplace ▪ 1 Hour

Laws and Rules for Florida Electricians:
Florida Statutes Chapter 489 ▪ 1 Hour

Workplace Safety:
Control of Hazardous Energy ▪ 1 Hour

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DISCLAIMER NOTE: This course is APPROVED by the Florida Electrical Administrative Board for continuing education to renew your electrical license and is not intended to replace or supersede any state or local adopted codes.

Business Practices for Florida Electricians: **Sales and Use Tax**

Learning Objectives:

1. Define commonly used terms associated with Sales and Use Tax
2. Identify types of Real Property Contracts
3. Evaluate how tax is calculated
4. Review construction for tax-exempt entities
5. Identify who must register to collect tax
6. Identify when tax is due
7. Review electronic filing and payment
8. Define penalty and interest

Introduction

In Florida, the taxing of property improvements, installation, and repairs varies according to the exact nature of the transaction.

This section of the course can help you determine:

- If you need to pay sales and use tax when you buy parts and materials.
- If you need to charge tax to your customers.

It will also explain what documentation you need to buy parts and materials tax-exempt.

Definitions

Real property — The land, its improvements, and fixtures; also called "realty" and "real estate." Improvements to real property — include the activities of building, erecting, constructing, altering, improving, repairing, or maintaining real property.

Fixture — An item that is permanently attached to the realty, building, other structure, or land, that keeps its separate identity after installation. All repairs are treated as repairs to real property. The term "fixture" does not include titled property, machinery, or equipment.

Tangible personal property — Personal property that you can see, weigh, measure, touch, or is in any manner perceptible to the senses, but not permanently attached to real property.

Fabricated or fabrication cost — The cost to a real property contractor to fabricate an item. This includes direct materials, labor, and other costs that are allocated to production.

Fabricated items — Items contractors manufacture, produce, process, compound, or fabricate for their own use in performing contracts for improvements to real property.

Improvements to Real Property – The activities of building, erecting, constructing, altering, improving, repairing, or maintaining real property.

Real Property

Generally, transactions that involve items that are permanently installed into a structure, where they cannot be removed without destroying them, are classified as real property and are not subject to sales tax. You should also consider the pricing arrangement in the contract when determining whether to charge tax.

<u>Examples of Real Property</u>

- Carpeting (permanent)
- Carpentry
- Dock, pier, seawall

- Driveway
- Electrical system
- Elevator, escalator
- Landscaping
- Masonry work
- Roofing
- Tile

Types of Contracts

Under **lump sum, cost plus, fixed fee, guaranteed price, or time-and-materials real property contracts**, the contractor is the final consumer of materials and supplies and:

- Must pay sales tax to suppliers on all purchases, including those made for the contractor's own use.
- Should not charge tax to the customer.

Contractors who perform taxable fabrication must pay use tax on the fabricated cost of the items fabricated. When calculating use tax on the cost of items of tangible personal property manufactured, produced, compounded, processed, or fabricated, the contractor should:

- Include the cost of the direct materials used to fabricate an item if the contractor did not pay tax to the materials vendor on the purchase of the materials.
- Exclude the cost of the direct materials if the contractor paid tax when it purchased the materials.

Retail sale plus installation contracts are contracts for improvements to real property where the contractor or subcontractor lists and prices in the contract **all materials** to be used **before** the work begins. The contractor or subcontractor also must agree to:

- Sell specifically described and listed materials and supplies at an agreed price or regular retail price, **and**
- Complete the work for either an additional agreed price or based on time used.

Since the sale of the materials is a separate transaction from the installation, the customer must assume title and risk the loss of the materials and supplies as delivered, rather than accepting only title to the completed work.

A contractor who performs retail sale plus installation contracts:

- Should buy the materials tax-exempt for resale.
- Should charge the customer tax on all materials.

Use of Materials

Tax is due on the use of goods by the contractor. The contractor is responsible for the tax if sales tax was not paid at the time of purchase.

Contractors may manufacture or fabricate a finished product from raw materials for use in a contract. Contractors owe tax on the manufactured cost of such products. For example, a cabinet maker/installer must pay sales tax on the manufactured cost of the cabinet.

If a contractor fabricates a product at the job site, fabrication labor is exempt from tax. Only the cost of the materials is subject to tax.

Construction for Tax-Exempt Entities

The contractor cannot use an entity's tax-exempt status to purchase materials used under a construction contract for the entity. Contractors owe tax on these purchases. However, the tax- exempt entity may buy the materials directly from the materials vendor and pay no tax when certain conditions are met:

- The tax-exempt entity must issue its purchase order and a copy of its exemption certificate, and make payment directly to the materials vendor.

- The vendor must directly invoice the tax-exempt entity.
- The tax-exempt entity must take title to the materials upon delivery to the jobsite; it must assume the risk of loss of the materials at the time of purchase.
- The seller of the materials or supplies must receive a purchase order and a copy of an exemption certificate issued directly from the tax-exempt entity **before** shipment or delivery. If the vendor does not receive this documentation, the vendor must collect sales tax from the contractor who placed the order.

Governmental entities (excluding the federal government) must issue a Certificate of Entitlement to each vendor and contractor to purchase supplies and materials tax-exempt for use in public works contracts. The Certificate of Entitlement certifies that:

- The materials and supplies purchased will become part of a public facility.
- The governmental entity will be liable for any tax, penalty, or interest due if the Department later determines that the items purchased do not qualify for exemption.
- The criteria established in Rule 12A-1.094, F.A.C., are being followed.

Tangible Personal Property

Generally, when installing or repairing tangible personal property, parts and labor are taxable. If the job is "labor only" it is not taxable, but the repairer must document that no parts or other items were incorporated into or attached to the repaired item.

Examples of Tangible Personal Property

- Carpets (except those that become real property) and rugs
- Drapes, curtains, blinds, shades, or slipcovers
- Equipment used to provide communications services installed on a customer's premises
- Garbage can receptacles
- Household appliances (except "built-in" appliances)
- Lawn markers
- Mail boxes
- Mirrors, except those that become real property
- Portable ice machines and refrigerators
- Precast clothesline poles
- Radio and television antennas
- Stepping stones
- Window air-conditioning units

Sometimes, the method of installation is a factor in determining taxability. For example, a mailbox that is bricked into a post beside the road is an improvement to real property. But if the mailbox is attached to the house or screwed into a wooden post in the ground, it is tangible personal property.

Taxes on Installation of Tangible Personal Property

Contractors and manufacturers who provide and install items of tangible personal property are considered to be retail dealers and:

- Should buy the materials tax-exempt for resale.
- Should charge sales tax on the full price, including installation, materials and any other charges.

Taxes on Repairs and Improvements to Tangible Personal Property

When repairing or improving tangible personal property, the repair person:

- Should buy the repair materials tax-exempt for resale.
- Should charge the customer tax on labor and materials, if parts are used in the repair.

Parts and Materials

A repair person may buy materials and parts tax-exempt if the materials and parts become part of the tangible personal property being repaired. These include items such as welding rods, solder, paint, thinner, oil, bolts, or nuts. Materials used to make the repair that do not become a part of the property are taxable to the repairer as overhead items. These include items such as tools, sandpaper, steel wool, flux, or detergents.

Repair Labor Only

Charges for repairs of tangible personal property needing only labor or service are not taxable. The repair person must keep documentation to prove no tangible personal property was joined with or attached to the repaired item. Sales tax applies even if the parts are provided at no charge.

Charges for fabrication are taxable. Fabrication occurs when material is cut, threaded, shaped, bent, welded, sheared, punched, drilled, machined, or is changed from its original state, because of work performed on the material.

Repairs Shipped In/Out of State

When tangible personal property is shipped into Florida, repaired, and then shipped back to its owner outside the state by common carrier or mail, the amount charged for the repair is exempt. If the tangible personal property is sent out of Florida to be repaired and then returned to Florida, the transaction is taxable.

Maintenance or Service Warranty Contracts

Maintenance or service warranty contracts covering taxable, tangible personal property are taxable. A service warranty is defined as any contract or agreement for the cost of maintaining, repairing, or replacing tangible personal property. This does not include contracts or agreements covering tangible personal property that becomes a part of real property. The sale of an extended warranty for the maintenance, repair, or replacement of tangible personal property that is not incorporated into real property is subject to sales tax.

Commercial vs. Residential Appliances

Commercial appliances (such as dishwashers, stoves, and refrigerators) are considered machinery and equipment when used in a business. The contractor should charge the customer tax on the appliance and labor.

Free-standing residential appliances are tangible personal property. The contractor should charge the customer tax on the appliance and labor.

Hard-wired/permanently installed residential appliances become real property. The contractor should pay tax when buying the appliance and should not charge the customer tax on the appliance or labor.

Fixtures

When installing fixtures, the contractor:

- Should pay sales tax when buying the materials.
- Should not charge the customer tax on materials or labor.

Types of fixtures include:

- Built-in cabinets, counters, or lockers
- Central air-conditioning units
- Elevators and escalators
- Furnaces
- Kitchen and bathroom sinks
- Wired lighting

When deciding whether an item is a fixture, consider:

- Method of attachment
- Intent of the parties
- Real property law
- Customization
- Permits and licensing
- Legal agreements

Mobile Home Repairs and Improvements

The contractor needs to look at the actual repair job to determine if the repair is to real property or tangible personal property. To determine how sales or use tax applies to a job, check the decal that is on the home.

- If the mobile home has an "RP" (real property) decal, it is considered real property.
  - Repairs to the actual mobile home or permanent attachments, including built-in appliances, are treated as the repair of real property.
  - The repair person should pay tax on all materials used to complete the repair. The customer should not be charged tax.
- If the mobile home has an "MH" (mobile home) decal, all repairs, permanent attachments, and built-in appliances are treated as the repair of tangible personal property. This includes repairs to the roof, plumbing, and central air-conditioning system.
  - The repair person should buy the materials tax-exempt for resale and charge tax to the customer on the entire repair bill (including labor) unless the repair invoice shows no parts were used (job is labor only).
- A mobile home with no MH or RP decal is treated as tangible personal property.
  - The repair person should buy the materials tax-exempt for resale and charge tax to the customer on the entire repair bill (including labor) unless the repair invoice shows no parts were used (job is labor only).

Who Must Register to Collect Sales Tax?

Persons who are in the business of repairing tangible personal property should register as a dealer to collect sales and use tax and discretionary sales surtax. Discretionary sales surtax is imposed by most Florida counties.

Contractors should not register unless they must pay tax on the cost of items made (fabricated) for use in fulfilling contracts. However, a contractor who performs real property contracts and sells tangible personal property at retail must register as a dealer.

You can register to collect and/or report tax through our website. The website will guide you through an application interview that will help you determine your tax obligations. If you do not have Internet access, you can complete a paper *Florida Business Tax Application* (Form DR-1). After we approve your registration application, you will receive a *Certificate of Registration* (Form DR-11), a *Florida Annual Resale Certificate* (Form DR-13), and your tax return forms.

Buying Materials and Parts Tax-Exempt

The Florida Annual Resale Certificate allows you to buy materials and parts tax-exempt that you intend to resell or incorporate into the finished product. Provide a copy of your current Florida Annual Resale Certificate to your supplier to make tax-exempt purchases for resale.

If materials bought for resale are later used (not resold), you must report and pay use tax on those items, plus any applicable discretionary sales surtax. There are additional liabilities for intentional misuse of a resale certificate.

If a contractor purchases materials from an out-of-state business that is not registered to collect Florida sales tax, the contractor is liable for use tax and surtax when the materials are imported into Florida.

What Is The Tax Rate?

Florida's sales tax rate is six percent; however, there is a "bracket system" for collecting sales tax on any part of a sale that is less than a whole dollar. Most Florida counties levy a discretionary sales surtax on transactions that are subject to sales and use tax. Dealers must collect the surtax along with the sales tax.

Discretionary Sales Surtax

The discretionary sales surtax rate depends on the county.

- When making a repair, calculate the surtax using the tax rate of the county where the repair is done.
- When making real property improvements, calculate the tax using the tax rate of the county in which the consumer, usually the contractor, takes delivery of the tangible personal property.
- For retail sale plus installation contracts, calculate the tax using the tax rate of the county in which the improvements or repairs take place.
- If a contractor pays use tax for using materials to fabricate items at the contractor's shop, calculate the tax using the tax rate of the county in which the fabrication occurs.

You can get a Discretionary Sales Surtax brochure (Form GT-800019) and a list of surtax counties and rates (Form DR-15DSS) from our website at **www.myflorida.com/dor**.

When is Tax Due?

Returns and payments are due the first day of the month and late after the 20th of the month following each reporting period, whether you are filing monthly, quarterly, twice a year, or yearly. If the 20th falls on a Saturday, Sunday, or state or federal holiday, returns and payments will be timely if they are postmarked on the first business day after the 20th. Florida law requires you to file a tax return even if you do not owe sales and use tax.

Electronic Filing and Payment

We offer the use of our free and secure website to file and pay sales tax. You also have the option of buying software from a software vendor. For more information on electronic filing and payment options, visit our website.

You may voluntarily file and pay taxes electronically; however, if you pay $20,000 or more in sales and use tax between July 1 and June 30 (the state fiscal year), you must use electronic funds transfer (EFT) for the next calendar year to pay your taxes.

Penalty and Interest

Penalty – If you file your return or pay tax late, a late penalty of 10 percent of the amount of tax owed, but not less than $50, may be charged. The $50 minimum penalty applies even if no tax is due. Penalty will also be charged if your return is incomplete.

Interest – A floating rate of interest applies to underpayments and late payments of tax. Current and prior period interest rates are posted on our website.

Reference Material

Tax Laws – The online Revenue Law Library contains statutes, rules, legislative changes, opinions, court cases, and publications. Search the library for:

- Rule 12A-1.016, F.A.C. - Sales; Installation Charges
- Rule 12A-1.043, F.A.C. - Manufacturing (includes fabrication)
- Rule 12A-1.051, F.A.C. - Sales to or by Contractors Who Repair, Alter, Improve and Construct Real Property

- Rule 12A-1.094, F.A.C. - Public Works Contracts
- Rule 12A-15.008, F.A.C. - Construction Contractors Who Repair, Alter, Improve, and Construct Real Property; Refund of Surtax

Brochures – Download these brochures from our "Forms and Publications" page:

- Florida's Discretionary Sales Surtax (GT-800019)
- Florida Annual Resale Certificate for Sales Tax (GT-800060)
- Sales and Use Tax on Repair of Tangible Personal Property (GT-800010)
- Sales and Use Tax on Mobile and Manufactured Home Repairs and Improvements (GT-800069)

Information, forms, and tutorials are available on our website at floridarevenue.com.

To speak with a Department representative, call Taxpayer Services at 850-488-6800, Monday through Friday, excluding holidays.

To find a taxpayer service center near you, go to **floridarevenue.com/taxes/servicecenters**.

For written replies to tax questions, write to:

Taxpayer Services - MS 3-2000
Florida Department of Revenue
5050 W Tennessee St Tallahassee FL 32399-0112

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FINAL EXAM QUESTIONS

1. **_____ is defined as "Personal property that you can see, weigh, measure, touch, or is in any manner perceptible to the senses, but not permanently attached to real property."**

A. Real property
B. Fabricated items
C. Tangible personal property
D. Improvements to real property

2. **_____ is defined as "An item that is permanently attached to the realty, building, other structure, or land, that keeps its separate identity after installation."**

A. Real property
B. Fixture
C. Fabricated items
D. Fabrication cost

3. **Which of the following is an example of Real Property?**

A. Electrical system
B. Kitchen sink
C. Furnace
D. Stepping Stones

4. **True or false? Under a lump sum contract, the contractor is the final consumer of materials and supplies and should charge tax to the customer.**

A. True
B. False

5. **True or false? A contractor who performs retail sale plus installation contracts should charge the customer tax on all materials.**

A. True
B. False

6. Which of the following is certified by a Certificate of Entitlement?

A. The materials and supplies purchased will become part of a public facility.
B. The governmental entity will be liable for any tax, penalty, or interest due if the Department later determines that the items purchased do not qualify for exemption.
C. The criteria established in Rule 12A-1.094, F.A.C., are being followed.
D. All of the above

7. Which of the following is NOT an example of Tangible Personal Property?

A. Mail boxes
B. Driveways
C. Drapes, curtains, blinds
D. Window air-conditioning units

8. The sale of an extended warranty for the maintenance, repair, or replacement of tangible personal property that is not incorporated into real property is subject to _____.

A. federal tax
B. income tax
C. sales tax
D. installation tax

9. When installing fixtures, the contractor should:

A. Pay sales tax when buying the materials.
B. Not charge the customer tax on materials or labor.
C. Charge the customer tax on materials but not on labor.
D. Both a and b are correct.

10. Which of the following should be considered when deciding whether an item is a fixture?

A. Method of attachment
B. Customization
C. Permits and licensing
D. All of the above

11. If a mobile home has an "MH" decal, all repairs, permanent attachments, and built-in appliances are treated as the repair of _____.

A. tangible personal property
B. real property
C. fixtures
D. None of the above

12. If a mobile home has an "RP" decal, it is considered _____.

A. tangible personal property
B. real property
C. fixtures
D. None of the above

13. What is Florida's sales tax rate?

A. 4%
B. 5%
C. 6%
D. 7%

14. Tax returns and payments are due _____ following each reporting period.

A. after the 20th of the month
B. the 5th of the month
C. the first day of the month
D. each state or federal holiday

15. If you file your return or pay tax late, a late penalty of 10 percent of the amount of tax owed, but not less than $ _____, may be charged.

A. $25
B. $100
C. $75
D. $50

Workers' Compensation: **A Drug-Free Workplace**

Learning Objectives:

1. Explain the benefits of a drug-free workplace
2. Identify how a drug-free workplace can save money
3. List the steps for becoming a State of Florida, Workers' Compensation Drug-Free Workplace
4. Emphasize the importance of educating employees on the hazards of drug use in the workplace.

Introduction

In 1990, legislation was enacted that created the Florida Drug-Free Workplace Program. The intent was to "promote drug-free workplaces in Florida, in order that employers (would) be afforded the opportunity to maximize their levels of productivity, enhance their competitive positions in the marketplace, and reach their desired levels of success without experiencing the costs, delays, and tragedies associated with work-related accidents resulting from drug abuse by employees." This legislation provides standardized criteria for employers and the workers' rights by ensuring consistent, accurate and reliable test results. The success of a drug-free workplace program largely depends upon the commitment of management and labor to actively contribute to and support the implementation of the program. By using the guidelines set forth in the Workers' Compensation Law, the workplace will be a safer place. Safer workplaces may mean fewer accidents, and fewer accidents mean lower workers' compensation costs for the employer.

For questions, comments, or suggestions concerning the contents of this brochure, you may contact the Division of Workers' Compensation, Customer Service Center at (850) 413-1601 or (850) 921-6966.

Incentives for Employers to Implement a Drug-Free Workplace Program may include:

- Ensuring a safer workplace
- A happier, healthier workforce
- A workplace in which all employees are drug-free
- A premium credit applied to an employer's workers' compensation premium
- Premium dollars are spent providing workers' compensation benefits to workers for bonafide workers' compensation accidents

The Benefits of Going Drug-Free

If you are in business, it's time you know the facts....

The available data continue to indicate that substance abuse has a significant impact in the workplace, with costs estimated at over $100 billion annually. Data show that:

- Seventy-one percent of illegal drug users are employed.
- Alcoholism causes 500 million lost workdays each year.
- Drug and alcohol-related problems are one of the four top reasons for the rise in workplace violence.
- Of those who called the cocaine helpline, 75 percent reported using drugs on the job, 64 percent admitted drugs adversely affected their job performance, 44 percent sold drugs to other employees, and 18 percent had stolen from co-workers to support their drug habit.
- A study conducted by the Institute for Health Policy, Brandeis University, found substance abuse to be the number one health problem in the country, resulting in more deaths, illnesses, and disabilities than any other preventable health condition.

While we do not yet have comprehensive data on the specific impact of workplace substance abuse, the data and studies available are compelling. For example:

- Drug-using employees at GM average 40 days sick leave each year compared to 4.5 days for non-users.
- Employees testing positive on pre-employment drug tests at Utah Power & Light were 5 times more likely to be involved in a workplace accident than those who tested negative.
- The State of Wisconsin estimates that expenses and losses related to substance abuse average 25 percent of the salary of each worker affected.

Despite recent news reports about the increased use of drugs, we continue to be encouraged that workplace substance abuse is a problem for which a solution exists. When the issue is addressed by establishing comprehensive programs, it is a "win-win" situation for both employers and employees. The following examples are illustrative.

A study of the economic impact of substance abuse treatment in Ohio found significant improvements in job-related performance:

- a 91 percent decrease in absenteeism;
- an 88 percent decrease in problems with supervisors;
- a 93 percent decrease in mistakes in work; and,
- a 97 percent decrease in on-the-job injuries.
- At Southern Pacific railroad, injuries dropped 71 percent.
- An electric supply company with 150 employees experienced a 39 percent decrease in absenteeism and a 36 percent increase in productivity.
- A construction company with 60 employees reduced workers' compensation claims by $50,000.
- A manufacturer with 560 employees experienced a 30-35 percent decrease in industrial accidents.

Statistics such as these suggest not just that workplace substance abuse is an issue that all employers need to address but also that it is an issue for which there is an answer. Taking steps to identify those with substance abuse problems and offer a helping hand will not only improve worker safety and health but also increase workplace productivity and competitiveness.

No one wants to believe that a friend or a co-worker has a substance abuse problem. Subtle changes in behavior may not be recorded because no one knows how or wants to confront the problem. If there is a problem, ignoring it will not make it go away. Substance abuse problems do not get better if left alone, they only get worse. When these behaviors are ignored, workers who have a substance abuse problem continue to be a risk to themselves and their co-workers.

By taking steps to eliminate drugs in your workplace, you will have a safer work environment, a more productive workforce, reduced workdays lost as a result of work accidents, and possibly lower workers' compensation costs and premiums.

Implementing a Workers' Compensation Drug-Free Workplace Program Can Save You Money

An employer that implements a Drug-Free Workplace Program, and becomes a carrier certified drug-free workplace may be protected (in most cases) from workplace accidents that are a result of employees working under the influence of drugs or alcohol. Studies have shown a well-planned program to reduce substance abuse can increase productivity, reduce accidents, and decrease costs due to insurance claims. An employer implementing this program will also receive additional benefits:

- All employees will become more aware of the importance of safety in the workplace and will benefit from a safer work environment.
- When an employee incurs a work-related injury, and refuses to take a drug test when requested, the injured employee may forfeit eligibility for workers' compensation benefits, regardless of the cause of the accident.
- An employee who loses a job or is denied employment as a result of a positive drug/alcohol test, may not qualify for unemployment compensation benefits. In that case, the contributory employer could be relieved of charges in connection with the unemployment claim.

- If drugs are found in the employee's system at or above threshold levels, the injured employee may not be entitled to workers' compensation benefits (Note: Case law may affect the injured employee's eligibility to benefits). This benefit is provided to employers who are carrier certified and in compliance with the program. If the employer is not carrier certified as a drug-free workplace, and the injured employee is able to show that the cause of the accident was not related to the presence of drugs in his/her system (i.e., if a heavy piece of equipment falls on the worker through no fault of his or her own), he or she may still be entitled to benefits.
- If you implement a drug-free workplace program and become carrier certified, you are eligible for a 5 percent credit to your workers' compensation insurance premium.

How to Become a State of Florida, Workers' Compensation Drug-Free Workplace

Plan and Develop a Clear and Comprehensive Drug-Free Workplace Policy

The first step in becoming a carrier certified workers' compensation drug-free workplace will be to plan, organize and develop your drug-free workplace policy. One time only, prior to any testing, this policy must be provided to all employees and job applicants. There are certain components which must be contained in the written drug-free workplace policy in order to qualify for and be in compliance with the Carrier Certified Workers' Compensation Drug-Free Workplace Program. These are:

1. A General Statement of the Employer's Policy on Employee Drug Use, which must identify the following:
   - Employer prohibition of drug use
   - Types of tests required (see table titled "Drug Tests")
   - Actions an employer may take as a result of a positive test result
2. The Florida Law which gives the Employer the Authority to Require Drug Testing. That Law is found in Section 440.102, of the Florida Statutes
   - a copy of Section 440.102 can be provided by calling the Customer Services Center at (850) 413-1601)
3. Drug Testing Procedures
   - An employer must use a laboratory that is licensed by the Florida Agency for Health Care Administration or certified by the U.S. Department of Health and Human Services. The name and address of the testing laboratory the employer will be using must also be stated in the policy
   - A current listing of the certified laboratories authorized by the Agency for Health Care Administration can be obtained by calling the Agency for Health Care Administration at (850) 487-3109 or the WC Customer Service Center at (850) 413-1601)
   - An employer is required to use a certified medical review officer (MRO) (include name and address, telephone number in your policy). The MRO will be responsible for:
   - Interpreting the drug test results,
     - Contacting the employee if the drug test is positive. The MRO is required to contact the donor who has a confirmed positive test result before reporting the results of the test to the employer.
     - If the donor has a plausible explanation for the test result showing positive (i.e., legal use of prescription or nonprescription medication), as determined by the MRO, the MRO will report the test result as negative to the employer. The MRO cannot be an employee of the testing laboratory.
   - Initial testing cannot begin until 60 days' notice has been provided of the effective date of the program, unless the employer had some type of testing program in place prior to 07/01/90; then no notice period is required. The date of initial testing should also be included in the policy. This gives employees a chance to come to the employer and request assistance. The 60 day notice does not apply to job applicants.
   - The employer must include notice to job applicants on vacancy announcements for those positions for which drug testing is required. A notice of the employer's drug- testing policy must be posted in plain view on the employer's premises, and copies of the policy must be made available for the employees or job applicants during regular business hours in the employer's personnel office, or other suitable location.

4. Confidentiality
   - All information, interviews, reports, statements, memoranda, and drug test results received by the employer through a drug-testing program are to be considered confidential information. An assurance must be provided regarding the confidentiality of test results, as well as information about prescription drugs provided by the employee or job applicant. This statement need only say that all information produced as a result of testing remain confidential unless the employee authorizes the release by written consent. The only exceptions to this are:
     1) when such a release is compelled by a hearing officer or a court of competent jurisdiction, and
     2) for determining qualification for unemployment compensation benefits.

   The written consent form must contain the following information:
     - The name of the person who is authorized to obtain the information,
     - The purpose of releasing the information,
     - The duration of the consent (the length of time the release will be needed; complete start and end dates)
     - The signature of the person authorizing release of the information.
   - Procedures for employees and job applicants to confidentially report to the MRO the use of prescription or nonprescription medications both before and after being tested. You may instruct your MRO to contact each donor prior to testing to ensure that he or she has all of the information necessary to adequately and effectively analyze the test results. This information may not be used or received in evidence, obtained in discovery, or disclosed in any public or private proceedings, except as provided in the law.
   - Information on drug testing shall not be released or used in any criminal proceeding(s) against the employee or job applicant. The employer, agent of the employer, or laboratory may have access to employee drug testing information when consulting with legal counsel in connection with actions relating to defense of a civil action.
5. A List of Over-The-Counter Medications Which May Alter or Affect Drug Test Results
   - A list of the most common medications, by brand name or common name, as well as by chemical name, which may alter or affect a drug test must be provided to each donor prior to testing. This will allow the donor to provide necessary information to the MRO to properly analyze the test results.
   - A list of such medications, as developed by the Agency for Health Care Administration, is available by contacting the Agency for Health Care Administration at (850) 487-3109, or the WC Customer Service Center at (850) 413-1601.
6. Consequences and Sanctions of Refusing to Submit to Drug Testing
   - Consequences and sanctions for an employee who refuses to submit to a drug test must be described in your policy. If an employee or job applicant refuses to submit to a drug test, the employer may discharge or discipline the employee or refuse to hire the job applicant. Sanctions imposed as a result of refusing to submit to testing, should, however, be consistent with the sanctions imposed on employees or job applicants who have tested positive for drugs or alcohol. Keep in mind, sanctions must be applied consistently to all employees. All employees must be treated equally. Firm and consistent application of sanctions stated in your policy is essential for a successful program.
7. A Listing of Employee Assistance Programs in your Local Area, with Addresses and Telephone Numbers
   - A list of names, addresses, and telephone numbers of employee assistance programs and local drug rehabilitation programs may be found in your local telephone directory, or provided by the county health service, or local Chamber of Commerce. If you need assistance in making your list, contact the Workers' Compensation Customer Service Center at (850) 413-1601.
8. A Statement that an Employee or Job Applicant who is Notified by the MRO of a Positive Confirmed Test Result May Contest the Result to the MRO within 5 Working Days after Receiving Notification of the Test Result

- If the employee's or job applicant's explanation or challenge is unsatisfactory to the MRO, the MRO may report a positive test result back to the employer.

9. A Statement Informing the Employee or Job Applicant of His/Her Responsibility to Notify the Laboratory of any Administrative or Civil Action brought Pursuant to Section 440.102, F.S.
10. The Types of Drugs for which Workers will be Tested
    - The policy must include a complete list of all of the drugs for which the employer will test, described by brand name or common name (if applicable), as well as by chemical name. The employer has the responsibility for choosing which drugs will be tested for in the testing procedures. The employer has the right to choose any or all drugs listed by the Agency for Health Care Administration in Rule Chapter 59A-24, Florida Administrative Code (A copy of Chapter 59A-24 may be obtained by calling the Agency for Health Care Administration at (850) 487-3109, or the WC Customer Service Center at (850) 413-1601).
11. A Statement Regarding any Applicable Collective Bargaining Agreement or Contract and the Right to Appeal to the Public Employees Relations Commission or Applicable Court

    Other practices and policies which you might want to consider including in a Drug-Free Workplace Program are:
    - Involving employees in the development and implementation of the program
    - Determining how the program will be presented to and made available to new and existing employees

Once You Have Planned Your Program, How Do You Implement It?

- Distribute the policy to all employees
- Educate your employees about the program. Meet with your employees to explain the benefits of having a drug-free work place and to answer any questions they may have.
- Post notification of your drug-free work place program. Give notice well in advance of policy implementation.

Once you have planned, developed and implemented your Workers' Compensation Carrier Certified Drug-Free Workplace Program, you can complete and submit Form 09-1 to your insurance carrier (do not send the application form to the Division of Workers' Compensation) to apply for your 5 percent credit on your workers' compensation insurance premium.

If you are individually self-insured, your savings will be evident through reduced incidence of accidents and a reduction in the premium calculations for assessments paid to the Workers' Compensation Administration Trust Fund. For more information regarding assessment reductions for individual self-insureds, please call the Division of Workers' Compensation's Bureau of Monitoring and Audit at (850) 487-4899.

An Employer is required to conduct the following types of Drug Tests under the Florida Workers' Compensation Drug-Free Workplace Program:

1. Job Applicant Testing. All final candidates for jobs (persons to whom you have offered employment) must be tested, although they may begin work pending the results of the drug test. Limited testing of applicants, based on a reasonable job classification basis, is permissible.
2. Reasonable Suspicion Testing. Drug tests must be conducted following any observed behavior creating "reasonable suspicion." These behaviors must be clearly defined in the policy. Some examples of reasonable suspicion include:
    - Direct observation of drug/alcohol use, or the symptoms of being under the influence of a drug or alcohol.
    - Abnormal behavior while at work or a significant deterioration in work performance. Be certain that these behaviors are properly documented to avoid any misunderstandings that may arise if this situation is contested by the employee.
    - A report of drug use, provided by a reliable and credible source.
    - Evidence that an individual has tampered with a drug test while working for you.
    - Information that an employee has caused, contributed to, or been involved in, an accident while at work.

- Evidence that an employee has used, possessed, sold, or solicited drugs while working or while on the employer's premises or while operating the employer's vehicle, machinery or equipment. If the testing is conducted on a "reasonable suspicion" basis, the employer must promptly record the circumstances which formed the basis of the determination that reasonable suspicion existed to warrant the testing. A copy of this documentation must be provided to the employee on request, and the original documentation must be kept confidential by the employer.

3. Follow-up Testing. If an employer requires an employee to enter an employee assistance program, or a drug rehabilitation program, as a condition of continued employment after a confirmed, positive drug test, the employer must require the employee to submit to a random drug test, at least once per year for a two year period after completion of the program. Advance notice of the testing date must not be given to the employee being tested. If the employee voluntarily enters the program, the employer has the option to not require follow-up testing.
4. Routine Fitness-For-Duty Testing. If you ordinarily require annual physical fitness-for-duty examinations, these examinations must include drug testing. An employer may conduct "random testing" or any other legal types of testing of their employees.

Education

An important part of your Drug-Free Workplace Program for employees should include education. How you inform employees of your policy and how you reinforce its message are important in determining the program's success. There are various methods by which employers may provide education. Employers may provide education on drug abuse on an annual basis.

FINAL EXAM QUESTIONS

16. In what year was legislation enacted that created the Florida Drug-Free Workplace Program?

A. 1970
B. 1980
C. 1990
D. 2015

17. Which of the following is NOT an incentive for implementing a Drug-Free Workplace Program?

A. A happier, healthier workforce
B. A workplace in which some employees are drug-free
C. A premium credit applied to an employer's workers' compensation premium
D. Ensuring a safer workplace

18. Available data continue to indicate that substance abuse has a significant impact in the workplace. Data indicate that alcoholism causes _____ lost workdays each year.

A. 500 million
B. 100 billion
C. 71 thousand
D. 65 million

19. The State of Wisconsin estimates that expenses and losses related to substance abuse average _____ percent of the salary of each worker affected.

A. 75
B. 65
C. 50
D. 25

20. A study of the economic impact of substance abuse treatment in Ohio found significant improvements in job-related performance. This includes a _____ percent decrease in mistakes in work.

A. 88%
B. 93%
C. 97%
D. 71%

21. According to the same economic study in Ohio, a construction company with 60 employees reduced workers' compensation claims by _____.

A. $50,000
B. $500,000
C. $100,000
D. $500

22. Studies have shown a well-planned program to reduce substance abuse can _____.

A. Increase productivity
B. Reduce accidents
C. Decrease costs due to insurance claims
D. All of the above

23. When conducting drug tests, an employer must use a laboratory that is licensed or certified by _____.

A. The Florida Agency for Health Care Administration
B. The U.S. Department of Health and Human Services
C. The Drug Enforcement Agency (DEA)
D. Both a and b are correct

24. True or false? All information, interviews, reports, statements, memoranda, and drug test results received by the employer through a drug-testing program are to be considered confidential information.

A. True
B. False

25. Once you have planned, developed and implemented your Workers' Compensation Carrier Certified Drug-Free Workplace Program, you can complete and submit Form 09-1 to whom?

A. Jimmy Patronis, Florida's Chief Financial Officer
B. The Division of Workers' Compensation
C. Your insurance carrier
D. Your employees

26. Available data continue to indicate that substance abuse has a significant impact in the workplace, with costs estimated at over _____ annually.

A. $100 million
B. $100 billion
C. $10 million
D. $10 billion

27. What percentage of illegal drug users are employed?

A. 51%
B. 61%
C. 71%
D. 81%

28. Drug-using employees at GM average _____ days of sick leave each year compared to 4.5 days for non-users.

A. 40
B. 30
C. 20
D. 10

29. Employees testing positive on pre-employment drug tests at Utah Power & Light were _____ times more likely to be involved in a workplace accident than those who tested negative.

A. 2
B. 3
C. 4
D. 5

30. If you implement a drug-free workplace program and become carrier certified, you are eligible for a _____ percent credit to your workers' compensation insurance premium.

A. 2
B. 3
C. 4
D. 5

Laws and Rules for Florida Electricians: **Florida Statutes Chapter 489**

Learning Objectives:

1. Identify the requirements for the approval of a business organization and the appointment of a qualifying agent.
2. Review the responsibilities of the qualifying agent.
3. Determine whether a qualifying agent is a sole primary qualifying agent or a secondary qualifying agent.
4. Review the appropriate measures to take upon the death of a contractor.

Introduction

This section of the course is intended to refresh your knowledge of construction lien law in Florida. These regulations can be found in Title XXXII Regulation of Professions and Occupations, Chapter 489 Part II Electrical and Alarm System Contracting of the 2019 Florida Statutes.

http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&URL=0400- 0499/0489/0489.html

Please remember that this course is intended to give the reader only factual information current at the time of publication. This course is not a substitute for professional advice and should not be used for guidance or decisions related to a specific design or construction project. This course is not intended to reflect the opinion of any of the entities, agencies or organizations identified in the materials and, if any opinions appear, are those of the individual author and should not be relied upon in any event.

Title XXXII Regulation of Professions and Occupations
Chapter 489 Part II Electrical and Alarm System Contracting
489.521 Business organizations; qualifying agents.

1. If an individual proposes to engage in contracting as a sole proprietorship certification shall be issued in the name of that individual.

If a fictitious name is used, the applicant shall furnish evidence of statutory compliance.

2a. Part 1: If the applicant proposing to engage in contracting is a partnership, corporation, business trust, or other legal entity, other than a sole proprietorship, the application shall:

- state the name of the partnership and its partners;
- the name of the corporation and its officers and directors and the name of each of its stockholders who is also an officer or director;
- the name of the business trust and its trustees; or
- the name of such other legal entity and its members.

In addition, the applicant shall furnish evidence of statutory compliance if a fictitious name is used.

A joint venture, including a joint venture composed of qualified business organizations, is itself a separate and distinct organization that shall be qualified in accordance with board rules.

The registration or certification, when issued upon application of a business organization, shall be in the name of the qualifying agent, and the name of the business organization shall be noted thereon.

If there is a change in any information that is required to be stated on the application, the business organization shall, within 45 days after such change occurs, mail the correct information to the department.

2a. Part 2: Any person certified or registered pursuant to this part who has had his or her license revoked shall not be eligible for a 5-year period to be a partner, officer, director, or trustee of a business organization as defined by this section. Such person shall also be ineligible to reapply for certification or registration under this part for a period of 5 years.

2b. The applicant shall also show that the proposed qualifying agent is legally qualified to act for the business organization in all matters connected with its electrical or alarm system contracting business and concerning

regulations by the board and that he or she has authority to supervise electrical or alarm system contracting undertaken by the business organization.

2c. The proposed qualifying agent shall demonstrate that he or she possesses the required skill, knowledge, and experience to qualify the business organization in the following manner:

1. Having met the qualifications provided in s. 489.511 and been issued a certificate of competency pursuant to the provisions of s. 489.511; or
2. Having demonstrated that he or she possesses the required experience and education requirements provided in s. 489.511 which would qualify him or her as eligible to take the certification examination.

3a. The applicant shall furnish evidence of:

- financial responsibility,
- credit, and
- business reputation of the business organization, as well as
- the name of the qualifying agent.

The board shall adopt rules defining financial responsibility based upon the business organization's credit history, ability to be bonded, and any history of bankruptcy or assignment of receivers. Such rules shall specify the financial responsibility grounds on which the board may determine that a business organization is not qualified to engage in contracting.

3b. In the event a qualifying agent must take the certification examination, the board shall, within 60 days from the date of the examination, inform the business organization in writing whether or not its qualifying agent has qualified.

3c. If the qualifying agent of a business organization applying to engage in contracting, after having been notified to do so, does not appear for examination within 1 year from the date of filing of the application, the examination fee paid by it shall be credited as an earned fee to the department. A new application to engage in contracting shall be accompanied by another application fee fixed pursuant to this act. Forfeiture of a fee may be waived by the board for good cause.

3d. Once the board has determined that the business organization's proposed qualifying agent has qualified, the business organization shall be authorized to engage in the contracting business. The certificate, when issued, shall be in the name of the qualifying agent, and the name of the business organization shall be noted thereon.

4. As a prerequisite to the initial issuance of a certificate, the applicant or the business organization he or she qualifies shall submit evidence that he or she or the business organization has obtained public liability and property damage insurance for the safety and welfare of the public in an amount to be determined by board rule.

5. At least one officer or supervising employee of the business organization must be qualified under this act in order for the business organization to be qualified to engage in contracting in the category of the business conducted. If any individual so qualified on behalf of the business organization ceases to qualify the business organization, he or she shall notify the board and the department thereof within 30 days after such occurrence.

In addition, if the individual is the only individual who qualifies the business organization, the business organization shall notify the board and the department of the individual's termination, and it shall have a period of 60 days from the termination of the individual to qualify another person under the provision of this act, failing which, the board shall determine that the business organization is no longer qualified to engage in contracting.

The individual shall also inform the board in writing when he or she proposes to engage in contracting in his or her own name or in affiliation with another business organization, and the individual, or such new business organization, shall supply the same information to the board as required for applicants under this act.

After an investigation of the financial responsibility, credit, and business reputation of the individual or the new business organization and upon a favorable determination, the board shall certify the business organization as qualified, and the department shall issue, without examination, a new certificate in the individual's name, which shall include the name of the new business organization, as provided in this section.

6. When a business organization qualified to engage in contracting makes application for a business tax receipt in any municipality or county of this state, the application shall be made with the tax collector in the name of the business organization, and the business tax receipt, when issued, shall be issued to the business organization upon payment of the appropriate licensing fee and exhibition to the tax collector of a valid certificate issued by the department.

7a. Each registered or certified contractor shall affix the number of his or her registration or certification to each application for a building permit and to each building permit issued and recorded. Each city or county building department shall require, as a precondition for the issuance of a building permit, that the contractor applying for the permit provide verification giving the number of his or her registration or certification under this part.

7b. The registration or certification number of a contractor shall be stated in each offer of services, business proposal, or advertisement, regardless of medium, used by that contractor. For the purposes of this part, the term "advertisement" does NOT include:

- business stationery;
- any promotional novelties such as:
  - balloons,
  - pencils,
  - trinkets, or
  - articles of clothing.

The board shall assess a fine of not less than $100 or issue a citation to any contractor who fails to include that contractor's certification or registration number when submitting an advertisement for publication, broadcast, or printing.

In addition, any person who claims in any advertisement to be a certified or registered contractor, but who does not hold a valid state certification or registration, commits a misdemeanor of the second degree, punishable as provided in s. 775.082 or s. 775.083.

8. Each qualifying agent shall pay the department an amount equal to the original fee for certification or registration to qualify any additional business organizations.

If the qualifying agent for a business organization desires to qualify additional business organizations, the board shall require him or her to present evidence of supervisory ability and financial responsibility of each such organization.

Allowing a licensee to qualify more than one business organization shall be conditioned upon the licensee showing that the licensee has both the capacity and intent to adequately supervise each business organization in accordance with s. 489.522(1).

The board shall not limit the number of business organizations which the licensee may qualify except upon the licensee's failing to provide such information as is required under this subsection or upon a finding that such information or evidence as is supplied is incomplete or unpersuasive in showing the licensee's capacity and intent to comply with the requirements of this subsection.

A qualification for an additional business organization may be revoked or suspended upon a finding by the board that the licensee has failed in the licensee's responsibility to adequately supervise the operations of that business organization in accordance with s. 489.522(1). Failure of the responsibility to adequately supervise the operations of a business organization in accordance with s. 489.522(1) shall be grounds for denial to qualify additional business organizations.

9. If a business organization or any of its partners, officers, directors, trustees, or members is disciplined for violating s. 489.533(1), the board may, on that basis alone, deny issuance of a certificate or registration to a qualifying agent on behalf of that business organization.

10a. A business organization proposing to engage in contracting is not required to apply for or obtain authorization under this part to engage in contracting if:

1. The business organization employs one or more registered or certified contractors licensed in accordance with this part who are responsible for obtaining permits and supervising all of the business organization's contracting activities;

2. The business organization engages only in contracting on property owned by the business organization or by its parent, subsidiary, or affiliated entities; and
3. The business organization, or its parent entity if the business organization is a wholly owned subsidiary, maintains a minimum net worth of $20 million.

10b. Any business organization engaging in contracting under this subsection shall provide the board with the name and license number of each registered or certified contractor employed by the business organization to supervise its contracting activities. The business organization is not required to post a bond or otherwise evidence any financial or credit information except as necessary to demonstrate compliance with paragraph 10a.

10c. A registered or certified contractor employed by a business organization to supervise its contracting activities under this subsection shall not be required to post a bond or otherwise evidence any personal financial or credit information so long as the individual performs contracting activities exclusively on behalf of a business organization meeting all of the requirements of paragraph 10a.

Title XXXII Regulation of Professions and Occupations
Chapter 489 Part II Electrical and Alarm System Contracting
489.522 Qualifying agents; responsibilities.

1a. A qualifying agent is a primary qualifying agent unless he or she is a secondary qualifying agent under this section. All primary qualifying agents for a business organization are jointly and equally responsible for:

- supervision of all operations of the business organization;
- all field work at all sites; and
- financial matters, both for the organization in general and for each specific job.

1b. When a qualifying agent ceases to qualify a business, the qualifying agent must transfer the license to another business, qualify himself or herself as an individual, or place the license in an inactive status within 60 days after termination of the qualifying status with the business.

2. One of the qualifying agents for a business organization that has more than one qualifying agent may be designated as the sole primary qualifying agent for the business organization by a joint agreement that is executed, on a form provided by the board, by all qualifying agents for the business organization.

The joint agreement shall be submitted to the board for approval. If the board determines that the joint agreement is in good order, it shall approve the designation and immediately notify the qualifying agents of such approval.

The designation made by the joint agreement is effective upon receipt of the notice by the qualifying agents. The qualifying agent designated for a business organization by a joint agreement is the sole primary qualifying agent for the business organization, and all other qualifying agents for the business organization are secondary qualifying agents.

2a. A designated sole primary qualifying agent has all the responsibilities and duties of a primary qualifying agent, notwithstanding that there are secondary qualifying agents for specified jobs. The designated sole primary qualifying agent is jointly and equally responsible with secondary qualifying agents for field work supervision.

2b. A secondary qualifying agent is responsible only for:

1. The supervision of field work at sites where his or her license was used to obtain the building permit; and
2. Any other work for which he or she accepts responsibility.

A secondary qualifying agent is not responsible for supervision of financial matters.

2c. A primary qualifying agent shall have approval authority for checks, payments, drafts, and contracts issued by or entered into by the business organization.

3a. A qualifying agent who has been designated by a joint agreement as the sole primary qualifying agent for a business organization may terminate this status as such by giving actual notice to the business organization, to the board, and to all secondary qualifying agents of his or her intention to terminate this status.

The notice to the board shall include proof satisfactory to the board that he or she has given the notice required in this paragraph.

The status of the qualifying agent shall cease upon the designation of a new primary qualifying agent or 60 days after satisfactory notice of termination has been provided to the board, whichever first occurs.

If no new primary qualifying agent has been designated within 60 days, all secondary qualifying agents for the business organization shall become primary qualifying agents, unless the joint agreement specifies that one or more of them shall become sole qualifying agents under such circumstances, in which case only they shall become sole qualifying agents.

3b. Any change in the status of a qualifying agent is prospective only. A qualifying agent is not responsible for his or her predecessor's actions, but is responsible, even after a change in status, for matters for which he or she was responsible while in a particular status.

Title XXXII Regulation of Professions and Occupations
Chapter 489 Part II Electrical and Alarm System Contracting
489.523 Emergency registration upon death of contractor.

If an incomplete contract exists at the time of death of a contractor, the contract may be completed by any person even though not certified. The person shall notify the appropriate board, within 30 days after the death of the contractor, of his or her name and address, knowledge of the contract, and ability to complete it.

If the board approves, he or she may proceed with the contract. The board shall then issue an emergency registration which shall expire upon the completion of the contract.

For purposes of this section, and upon written approval of the board, an incomplete contract may be one which has been awarded to, or entered into by, the contractor before his or her death, or on which he or she was the low bidder and the contract is subsequently awarded to him or her, regardless of whether any actual work has commenced under the contract before the contractor's death.

FINAL EXAM QUESTIONS

31. Any person certified or registered pursuant to this part who has had his or her license revoked shall not be eligible for a _____ period to be a partner, officer, director, or trustee of a business organization.

A. 10-year
B. 5-year
C. 12-month
D. 5-month

32. The board shall adopt rules defining financial responsibility based upon which of the following?

A. the business organization's credit history
B. ability to be bonded
C. any history of bankruptcy
D. All of the above

33. In the event a qualifying agent must take the certification examination, the board shall, within _____ from the date of the examination, inform the business organization in writing whether or not its qualifying agent has qualified.

A. 60 days
B. 90 days
C. 30 days
D. 6 months

34. If any individual so qualified on behalf of the business organization ceases to qualify the business organization, he or she shall notify the board and the department thereof within _____ after such occurrence.

A. 60 days
B. 90 days
C. 30 days
D. 6 months

35. The board shall assess a fine of not less than _____ or issue a citation to any contractor who fails to include that contractor's certification or registration number when submitting an advertisement for publication, broadcast, or printing.

A. $50
B. $100
C. $500
D. $1,000

36. True or false? When articles of clothing are used as a promotional material, the contractor must include his or her registration or certification number.

A. True
B. False

37. Any person who claims in any advertisement to be a certified or registered contractor, but who does not hold a valid state certification or registration, commits a(n) _____.

A. misdemeanor of the second degree
B. misdemeanor of the first degree
C. felony
D. ethical offense

38. True or false? The board shall limit the number of business organizations for which the licensee may qualify to 5.

A. True
B. False.

39. All primary qualifying agents for a business organization are jointly and equally responsible for which of the following?

A. supervision of all operations of the business organization
B. all field work at all sites
C. financial matters
D. all of the above

40. When a qualifying agent ceases to qualify a business, the qualifying agent must transfer the license to another business, qualify himself or herself as an individual, or place the license in an inactive status within _____ after termination of the qualifying status with the business.

A. 5 days
B. 10 days
C. 30 days
D. 60 days

41. A secondary qualifying agent is responsible only for which of the following?

A. The supervision of field work at sites where his or her license was used to obtain the building permit
B. Any work for which he or she accepts responsibility
C. Financial matters
D. Both a and b

42. True or false? A qualifying agent is not responsible for his or her predecessor's actions.

A. True
B. False

43. After the death of a contractor, an incomplete contract may be completed by any person so long as that person notifies the appropriate board within _____ after the death of the contractor.

A. 30 days
B. 60 days
C. 15 days
D. 5 days

44. An emergency registration that was issued to an individual in order to complete a contract of a deceased contractor shall expire _____.

A. one year from the date of issuance
B. five years from the date of issuance
C. upon the completion of the contract
D. none of the above

45. True or false? An incomplete contract may be one which has been awarded to, or entered into by, the contractor before his or her death, regardless of whether any actual work has commenced.

A. True
B. False

Workplace Safety: **Control of Hazardous Energy**

Learning Objectives:

1. Define "lockout" and "tagout"
2. Summarize the requirements of the OSHA standard
3. Define commonly used terms

Introduction

This section presents OSHA's general requirements for controlling hazardous energy during service or maintenance of machines or equipment. It is not intended to replace or to supplement OSHA standards regarding the control of hazardous energy. After reading this section, employers and other interested parties are urged to review the OSHA standards on the control of hazardous energy to gain a complete understanding of the requirements regarding the control of hazardous energy.

What is "lockout/tagout"?

"Lockout/tagout" refers to specific practices and procedures to safeguard employees from the unexpected energization or startup of machinery and equipment, or the release of hazardous energy during service or maintenance activities. This requires, in part, that a designated individual turns off and disconnects the machinery or equipment from its energy source(s) before performing service or maintenance and that the authorized employee(s) either lock or tag the energy-isolating device(s) to prevent the release of hazardous energy and take steps to verify that the energy has been isolated effectively. If the potential exists for the release of hazardous stored energy or for the reaccumulation of stored energy to a hazardous level, the employer must ensure that the employee(s) take steps to prevent injury that may result from the release of the stored energy.

Lockout devices hold energy-isolation devices in a safe or "off" position. They provide protection by preventing machines or equipment from becoming energized because they are positive restraints that no one can remove without a key or other unlocking mechanism, or through extraordinary means, such as bolt cutters. Tagout devices, by contrast, are prominent warning devices that an authorized employee fastens to energy-isolating devices to warn employees not to reenergize the machine while he or she services or maintains it. Tagout devices are easier to remove and, by themselves, provide employees with less protection than do lockout devices.

Why do I need to be concerned about lockout/tagout?

Employees can be seriously or fatally injured if machinery they service or maintain unexpectedly energizes, starts up, or releases stored energy. OSHA's standard on the Control of Hazardous Energy (Lockout/Tagout), found in Title 29 of the Code of Federal Regulations (CFR) Part 1910.147, spells out the steps employers must take to prevent accidents associated with hazardous energy. The standard addresses practices and procedures necessary to disable machinery and prevent the release of potentially hazardous energy while maintenance or servicing activities are performed.

Two other OSHA standards also contain energy control provisions: 29 CFR 1910.269 and 1910.333. In addition, some standards relating to specific types of machinery contain deenergization requirements—such as 29 CFR 1910.179(l)(2)(i)(c)(requiring the switches to be "open and locked in the open position" before performing preventive maintenance on overhead and gantry cranes). The provisions of Part 1910.147 apply in conjunction with these machine-specific standards to assure that employees will be adequately protected against hazardous energy.

Requirements of the OSHA Standard

What are OSHA's requirements?

OSHA's standard establishes minimum performance requirements for controlling hazardous energy. The standard specifies that employers must establish an energy-control program to ensure that employees isolate machines from their energy sources and render them inoperative before any employee services or maintains them.

As part of an energy-control program, employers must:

- Establish energy-control procedures for removing the energy supply from machines and for putting appropriate lockout or tagout devices on the energy-isolating devices to prevent unexpected reenergization. When appropriate, the procedure also must address stored or potentially reaccumulated energy;
- Train employees on the energy-control program, including the safe application, use, and removal of energy controls; and
- Inspect these procedures periodically (at least annually) to ensure that they are being followed and that they remain effective in preventing employee exposure to hazardous energy.

If employers use tagout devices on machinery that can be locked out, they must adopt additional measures to provide the same level of employee protection that lockout devices would provide. Within the broad boundaries of the standard, employers have the flexibility to develop programs and procedures that meet the needs of their individual workplaces and the particular types of machines being maintained or serviced.

What must an energy-control procedure include?

Employers must develop, document, and use procedures to control potentially hazardous energy. The procedures explain what employees must know and do to control hazardous energy effectively when they service or maintain machinery. If this information is the same for the various machines used at a workplace, then a single energy-control procedure may suffice. For example, similar machines (those using the same type and magnitude of energy) that have the same or similar types of control measures can be covered by a single procedure. Employers must develop separate energy-control procedures if their workplaces have more variable conditions such as multiple energy sources, different power connections, or different control sequences that workers must follow to shut down various pieces of machinery.

The energy-control procedures must outline the scope, purpose, authorization, rules, and techniques that employees will use to control hazardous energy sources, as well as the means that will be used to enforce compliance. These procedures must provide employees at least the following information:

- A statement on how to use the procedures;
- Specific procedural steps to shut down, isolate, block, and secure machines;
- Specific steps designating the safe placement, removal, and transfer of lockout/tagout devices and identifying who has responsibility for the lockout/tagout devices; and
- Specific requirements for testing machines to determine and verify the effectiveness of lockout devices, tagout devices, and other energy-control measures.

What must workers do before they begin service or maintenance activities?

Before beginning service or maintenance, the following steps must be accomplished in sequence and according to the specific provisions of the employer's energy-control procedure:

(1) Prepare for shutdown;
(2) Shut down the machine;
(3) Disconnect or isolate the machine from the energy source(s);
(4) Apply the lockout or tagout device(s) to the energy-isolating device(s);
(5) Release, restrain, or otherwise render safe all potential hazardous stored or residual energy. If a possibility exists for reaccumulation of hazardous energy, regularly verify during the service and maintenance that such energy has not reaccumulated to hazardous levels; and
(6) Verify the isolation and deenergization of the machine.

What must workers do before they remove their lockout or tagout device and reenergize the machine?

Employees who work on deenergized machinery may be seriously injured or killed if someone removes lockout/tagout devices and reenergizes machinery without their knowledge. Thus, it is extremely important that all employees respect lockout and tagout devices and that only the person(s) who applied these devices remove them.

Before removing lockout or tagout devices, the employees must take the following steps in accordance with the specific provisions of the employer's energy-control procedure:

- Inspect machines or their components to assure that they are operationally intact and that nonessential items are removed from the area; and
- Check to assure that everyone is positioned safely and away from machines.

After removing the lockout or tagout devices but before reenergizing the machine, the employer must assure that all employees who operate or work with the machine, as well as those in the area where service or maintenance is performed, know that the devices have been removed and that the machine is capable of being reenergized. (See Sections 6(e) and (f) of 29 CFR Part 1910.147 for specific requirements.) In the rare situation in which the employee who placed the lockout/tagout device is unable to remove that device, another person may remove it under the direction of the employer, provided that the employer strictly adheres to the specific procedures outlined in the standard. (See 29 CFR 1910.147(e)(3).)

When do I use lockout and how do I do it?

You must use a lockout program (or tagout program that provides a level of protection equal to that achieved through lockout) whenever your employees engage in service or maintenance operations on machines that are capable of being locked out and that expose them to hazardous energy from unexpected energization, startup, or release of stored energy.

The primary way to prevent the release of hazardous energy during service and maintenance activities is by using energy-isolating devices such as manually operated circuit breakers, disconnect switches, and line valves and safety blocks. Lockout requires use of a lock or other lockout device to hold the energy-isolating device in a safe position to prevent machinery from becoming reenergized. Lockout also requires employees to follow an established procedure to ensure that machinery will not be reenergized until the same employee who placed the lockout device on the energy-isolating device removes it.

How can I determine if the energy-isolating device can be locked out?

An energy-isolating device is considered "capable of being locked out" if it meets one of the following requirements:

- Is designed with a hasp or other part to which you can attach a lock such as a lockable electric disconnect switch;
- Has a locking mechanism built into it; or
- Can be locked without dismantling, rebuilding, or replacing the energy-isolating device or permanently altering its energy-control capability, such as a lockable valve cover or circuit breaker blockout.

What do I do if I cannot lock out the equipment?

Sometimes it is not possible to lock out the energy-isolating device associated with the machinery. In that case, you must securely fasten a tagout device as close as safely possible to the energy-isolating device in a position where it will be immediately obvious to anyone attempting to operate the device. You also must meet all of the tagout provisions of the standard. The tag alerts employees to the hazard of reenergization and states that employees may not operate the machinery to which it is attached until the tag is removed in accordance with an established procedure.

What other options do I have?

If it is possible to lock out an energy-isolating device, employers must use lockout devices unless they develop, document, and use a tagout procedure that provides employees with a level of protection equal to that provided by a lockout device. In a tagout program, an employer can attain an equal level of protection by complying with all tagout-related provisions of the standard and using at least one added safety measure that prevents unexpected reenergization. Such measures might include removing an isolating circuit element, blocking a controlling switch, opening an extra disconnecting device, or removing a valve handle to minimize the possibility that machines might inadvertently be reenergized while employees perform service and maintenance activities.

When can tagout devices be used instead of lockout devices?

When an energy-isolating device cannot be locked out, the employer must modify or replace the energy-isolating device to make it capable of being locked out or use a tagout system.

Whenever employers significantly repair, renovate, or modify machinery or install new or replacement machinery, however, they must ensure that the energy-isolating devices for the machinery are capable of being locked out.

Tagout devices may be used on energy-isolating devices that are capable of being locked out if the employer develops and implements the tagout in a way that provides employees with a level of protection equal to that achieved through a lockout system.

When using a tagout system, the employer must comply with all tagout-related provisions of the standard and train employees in the limitations of tags, in addition to providing normal hazardous energy control training for all employees.

What are the limitations of tagout devices?

A tagout device is a prominent warning that clearly states that the machinery being controlled must not be operated until the tag is removed in accordance with an established procedure. Tags are essentially warning devices and do not provide the physical restraint of a lock. Tags may evoke a false sense of security. For these reasons, OSHA considers lockout devices to be more secure and more effective than tagout devices in protecting employees from hazardous energy.

What are the requirements for lockout/tagout devices?

Whether lockout or tagout devices are used, they must be the only devices the employer uses in conjunction with energy-isolating devices to control hazardous energy. The employer must provide these devices and they must be singularly identified and not used for other purposes. In addition, they must have the following characteristics:

- Durable enough to withstand workplace conditions. Tagout devices must not deteriorate or become illegible even when used with corrosive components such as acid or alkali chemicals or in wet environments.
- Standardized according to color, shape, or size. Tagout devices also must be standardized according to print and format. Tags must be legible and understandable by all employees. They must warn employees about the hazards if the machine is energized, and offer employees clear instruction such as: "Do Not Start," "Do Not Open," "Do Not Close," "Do Not Energize," or "Do Not Operate."
- Substantial enough to minimize the likelihood of premature or accidental removal. Employees should be able to remove locks only by using excessive force with special tools such as bolt cutters or other metal-cutting tools. Tag attachments must be non- reusable, self-locking, and non-releasable, with a minimum unlocking strength of 50 pounds. Tags must be attachable by hand, and the device for attaching the tag should be a one-piece nylon cable tie or its equivalent so it can withstand all environments and conditions.
- Labeled to identify the specific employees authorized to apply and remove them.

What do employees need to know about lockout/tagout programs?

Training must ensure that employees understand the purpose, function, and restrictions of the energy-control program. Employers must provide training specific to the needs of "authorized," "affected," and "other" employees.

"Authorized" employees are those responsible for implementing the energy-control procedures or performing the service or maintenance activities. They need the knowledge and skills necessary for the safe application, use, and removal of energy-isolating devices. They also need training in the following:

- Hazardous energy source recognition;
- The type and magnitude of the hazardous energy sources in the workplace; and
- Energy-control procedures, including the methods and means to isolate and control those energy sources.

"Affected" employees (usually machine operators or users) are employees who operate the relevant machinery or whose jobs require them to be in the area where service or maintenance is performed. These employees do not service or maintain machinery or perform lockout/tagout activities. Affected employees must receive training in the purpose and use of energy-control procedures. They also need to be able to do the following:

- Recognize when the energy-control procedure is being used,
- Understand the purpose of the procedure, and
- Understand the importance of not tampering with lockout or tagout devices and not starting or using equipment that has been locked or tagged out.

All other employees whose work operations are or may be in an area where energy-control procedures are used must receive instruction regarding the energy-control procedure and the prohibition against removing a lockout or tagout device and attempting to restart, reenergize, or operate the machinery.

In addition, if tagout devices are used, all employees must receive training regarding the limitations of tags. (See 29 CFR 1910.147(c)(7)(ii).)

When is training necessary?

The employer must provide initial training before starting service and maintenance activities and must provide retraining as necessary. In addition, the employer must certify that the training has been given to all employees covered by the standard. The certification must contain each employee's name and dates of training.

Employers must provide retraining for all authorized and affected employees whenever there is a change in the following:

- Job assignments,
- Machinery or processes that present a new hazard, or
- Energy-control procedures.

Retraining also is necessary whenever a periodic inspection reveals, or an employer has reason to believe, that shortcomings exist in an employee's knowledge or use of the energy-control procedure.

What if I need power to test or position machines, equipment, or components?

OSHA allows the temporary removal of lockout or tagout devices and the reenergization of the machine only in limited situations for particular tasks that require energization—for example, when power is needed to test or position machines, equipment, or components. However, this temporary exception applies only for the limited time required to perform the particular task requiring energization. Employers must provide effective protection from hazardous energy when employees perform these operations. The following steps must be performed in sequence before reenergization:

1. Clear tools and materials from machines.
2. Clear employees from the area around the machines.
3. Remove the lockout or tagout devices as specified in the standard.
4. Energize the machine and proceed with testing or positioning.
5. Deenergize all systems, isolate the machine from the energy source, and reapply energy- control measures if additional service or maintenance is required.

The employer must develop, document, and use energy-control procedures that establish a sequence of actions to follow whenever reenergization is required as a part of a service or maintenance activity, since employees may be exposed to significant risks during these transition periods.

What if I use outside contractors for service or maintenance procedures?

If an outside contractor services or maintains machinery, the onsite employer and the contractor must inform each other of their respective lockout or tagout procedures. The onsite employer also must ensure that employees understand and comply with all requirements of the contractor's energy-control program(s).

What if a group performs service or maintenance activities?

When a crew, department, or other group performs service or maintenance, they must use a procedure that provides all employees a level of protection equal to that provided by a personal lockout or tagout device. Each

employee in the group must have control over the sources of hazardous energy while he or she is involved in service and maintenance activities covered by the standard. Personal control is achieved when each authorized employee affixes a personal lockout/tagout device to a group lockout mechanism instead of relying on a supervisor or other person to provide protection against hazardous energy.

Detailed requirements of individual responsibilities are provided in 29 CFR 1910.147(f)(3)(ii)(A)through (D). Appendix C of OSHA Directive STD 1-7.3, 29 CFR 1910.147, the Control of Hazardous Energy (Lockout/Tagout)-Inspection Procedures and Interpretive Guidance, (September 11, 1990), provides additional guidance.

What if a shift changes during machine service or maintenance?

Employers must make sure that there is a continuity of lockout or tagout protection. This includes the orderly transfer of lockout or tagout device protection between outgoing and incoming shifts to control hazardous energy. When lockout or tagout devices remain on energy- isolation devices from a previous shift, the incoming shift members must verify for themselves that the machinery is effectively isolated and deenergized.

How often do I need to review my lockout/tagout procedures?

Employees are required to review their procedures at least once a year to ensure that they provide adequate worker protection. As part of the review, employers must correct any deviations and inadequacies identified in the energy-control procedure or its application.

What does a review entail?

The periodic inspection is intended to assure that employees are familiar with their responsibilities under the procedure and continue to implement energy-control procedures properly. The inspector, who must be an authorized person not involved in using the particular control procedure being inspected, must be able to determine the following:

- Employees are following steps in the energy-control procedure;
- Employees involved know their responsibilities under the procedure; and
- The procedure is adequate to provide the necessary protection, and what changes, if any, are needed.

For a lockout procedure, the periodic inspection must include a review of each authorized employee's responsibilities under the energy-control procedure being inspected. Where tagout is used, the inspector's review also extends to affected employees because of the increased importance of their role in avoiding accidental or inadvertent activation of the machinery.

In addition, the employer must certify that the designated inspectors perform periodic inspections. The certification must specify the following:

- Machine or equipment on which the energy-control procedure was used,
- Date of the inspection,
- Names of employees included in the inspection, and
- Name of the person who performed the inspection.

Commonly Used Terms

Affected employee. An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Authorized employee. A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under the standard.

Capable of being locked out. An energy-isolating device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy-isolating devices are capable of being locked out, if lockout can be achieved, without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

Energized. Connected to an energy source or containing residual or stored energy.

Energy-isolating device. A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: a manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit-type devices are not energy-isolating devices.

Energy source. Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Hot tap. A procedure used in the repair, maintenance, and services activities, which involve welding on a piece of equipment (pipelines, vessels, or tanks) under pressure, in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.

Lockout. The placement of a lockout device on an energy-isolating device, in accordance with an established procedure, ensuring that the energy-isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout device. A device that uses a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

Normal production operations. The utilization of a machine or equipment to perform its intended production function.

Servicing and/or maintenance. Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment.

These activities include lubricating, cleaning or unjamming machines or equipment and making adjustments or tool changes where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

Setting up. Any work performed to prepare a machine or equipment to perform its normal production operation.

Tagout. The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout device. A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy-isolating device in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed.

FINAL EXAM QUESTIONS

46. Lockout devices hold energy-isolation devices in a safe or " _____ " position.

A. on
B. off
C. neutral
D. isolated

47. Tagout devices are prominent _____ devices that an authorized employee fastens to energy-isolating devices to warn employees not to reenergize the machine while he or she services or maintains it.

A. warning
B. isolating
C. deenergizing
D. grounding

48. True or false? Tagout devices are easier to remove and, by themselves, provide employees with less protection than do lockout devices.

A. True
B. False

49. The OSHA Standard for Control of Hazardous Energy applies to all sources of energy, including, but not limited to, which of the following?

A. mechanical
B. electrical
C. hydraulic
D. all of the above

50. Which of the following activities are not covered by the lockout/tagout standard?

A. minor tool changes and adjustments
B. minor servicing activities that are routine
C. minor servicing activities that are integral to the use of the production equipment
D. all of the above

51. True or false? If employers use tagout devices on machinery that can be locked out, they must adopt additional measures to provide the same level of employee protection that lockout devices would provide.

A. True
B. False

52. Before beginning service or maintenance, OSHA provides a series of steps that must be accomplished in sequence and according to the specific provisions of the employer's energy- control procedure. What is the 2nd step in that series?

A. Prepare for shutdown
B. Disconnect or isolate the machine from the energy source(s)
C. Shut down the machine
D. Verify the isolation and deenergization of the machine

53. Tag attachments must be non-reusable, self-locking, and non-releasable, with a minimum unlocking strength of _____.

A. 25 pounds
B. 50 pounds
C. 75 pounds
D. 100 pounds

54. Employees are required to review their procedures at least _____ time(s) per year to ensure that they provide adequate worker protection.

A. three
B. two
C. one
D. zero

55. _____ is defined as: A procedure used in the repair, maintenance, and services activities, which involve welding on a piece of equipment (pipelines, vessels, or tanks) under pressure, in order to install connections or appurtenances.

A. Hot tap
B. Energized
C. Energy-isolating device
D. Lockout

56. True or false? A single energy-control procedure will suffice for a workplace with variable conditions such as multiple energy sources, different power connections, or different control sequences.

A. True
B. False

57. True or false? Tags provide the same physical restraint of a lock.

A. True
B. False

58. The employer must certify that the designated inspectors perform periodic inspections. The inspection certification must specify which of the following?

A. Machine or equipment on which the energy-control procedure was used
B. Date of the inspection
C. Name of the person who performed the inspection
D. All of the above

59. _____ is defined as: Connected to an energy source or containing residual or stored energy.

A. Energized
B. Energy-isolated device
C. Energy source
D. Hot tap

60. _____ is defined as: A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment.

A. Authorized employee
B. Affected employee
C. Capable of being locked out
D. Servicing and/or maintenance

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7.	Ⓐ Ⓑ Ⓒ Ⓓ	22.	Ⓐ Ⓑ Ⓒ Ⓓ	37.	Ⓐ Ⓑ Ⓒ Ⓓ	52.	Ⓐ Ⓑ Ⓒ Ⓓ
8.	Ⓐ Ⓑ Ⓒ Ⓓ	23.	Ⓐ Ⓑ Ⓒ Ⓓ	38.	Ⓐ Ⓑ Ⓒ Ⓓ	53.	Ⓐ Ⓑ Ⓒ Ⓓ
9.	Ⓐ Ⓑ Ⓒ Ⓓ	24.	Ⓐ Ⓑ Ⓒ Ⓓ	39.	Ⓐ Ⓑ Ⓒ Ⓓ	54.	Ⓐ Ⓑ Ⓒ Ⓓ
10.	Ⓐ Ⓑ Ⓒ Ⓓ	25.	Ⓐ Ⓑ Ⓒ Ⓓ	40.	Ⓐ Ⓑ Ⓒ Ⓓ	55.	Ⓐ Ⓑ Ⓒ Ⓓ
11.	Ⓐ Ⓑ Ⓒ Ⓓ	26.	Ⓐ Ⓑ Ⓒ Ⓓ	41.	Ⓐ Ⓑ Ⓒ Ⓓ	56.	Ⓐ Ⓑ Ⓒ Ⓓ
12.	Ⓐ Ⓑ Ⓒ Ⓓ	27.	Ⓐ Ⓑ Ⓒ Ⓓ	42.	Ⓐ Ⓑ Ⓒ Ⓓ	57.	Ⓐ Ⓑ Ⓒ Ⓓ
13.	Ⓐ Ⓑ Ⓒ Ⓓ	28.	Ⓐ Ⓑ Ⓒ Ⓓ	43.	Ⓐ Ⓑ Ⓒ Ⓓ	58.	Ⓐ Ⓑ Ⓒ Ⓓ
14.	Ⓐ Ⓑ Ⓒ Ⓓ	29.	Ⓐ Ⓑ Ⓒ Ⓓ	44.	Ⓐ Ⓑ Ⓒ Ⓓ	59.	Ⓐ Ⓑ Ⓒ Ⓓ
15.	Ⓐ Ⓑ Ⓒ Ⓓ	30.	Ⓐ Ⓑ Ⓒ Ⓓ	45.	Ⓐ Ⓑ Ⓒ Ⓓ	60.	Ⓐ Ⓑ Ⓒ Ⓓ