



# Electrical Employee Rating System (E-Rating System) Overview—IEC Dallas and Fort Worth

The E-Rating System, adopted and endorsed by both IEC Dallas and IEC Fort Worth, is designed to promote the professional development and safety of the electrical workforce. This system provides a structured path for both employees and employers, ensuring clear progression, learning objectives, and enhanced communication across different skill levels within the electrical industry. Through its detailed framework, the E-Rating System outlines specific competencies and milestones, creating defined routes for career advancement and setting goals for employees. Additionally, the program facilitates targeted training, helps identify skill gaps, and promotes continuous learning, ultimately building a more skilled and capable workforce. With an annual audit to ensure its effectiveness and relevance, the E-Rating System keeps the workforce updated with the latest industry practices, maintaining high standards of professionalism and safety.

## Key Benefits

### Industry Benefits:

**Improves Communication:** Enhances dialogue between contractors about employees' skill levels.

- **Steady Pipeline:** Ensures a consistent flow of skilled professionals ready for advanced roles.
- **Skill-Task Alignment:** Matches the right skills with job tasks, boosting efficiency and safety.
- **Professional Development:** Promotes the growth of professional skills and safety awareness.
- **Continuous Learning:** Encourages ongoing learning and improvement in the industry.
- **Standardized Competency:** Establishes clear benchmarks for skill assessment and progression.
- **Enhanced Safety:** Contributes to higher safety standards on job sites.
- **Increased Productivity:** Boosts productivity by ensuring well-trained employees.
- **Industry Reputation:** Enhances the industry's reputation for professionalism and safety.

### Individual Benefits:

- **Career Advancement:** Provides a defined route for career progression within the electrical field.
- **Clear Competencies:** Outlines specific competencies and milestones for each E-Rating level, ensuring transparency and motivation.
- **Goal Setting:** Helps employees set and achieve professional goals.
- **Skill Recognition:** Offers formal recognition of skills and achievements.
- **Increased Job Satisfaction:** Enhances job satisfaction through clear progression paths and skill development.
- **Improved Employability:** Boosts employability by equipping individuals with recognized, industry-standard skills.
- **Safety Awareness:** Improves safety awareness through structured training and education.
- **Continuous Learning:** Encourages lifelong learning and professional growth.
- **Networking Opportunities:** Provides opportunities to connect with industry professionals and mentors.



## Company Benefits:

- **Structured Workforce Development:** Provides employers with a detailed framework of learning objectives to guide workforce development.
- **Identifies Skill Gaps:** Helps employers identify skill gaps and training needs.
- **Targeted Training:** Facilitates targeted training and skill development, aligning with industry standards and employer needs.
- **Professional Skills Development:** Promotes the development of professional skills and safety awareness in the electrical industry.
- **Continuous Learning:** Encourages continuous learning and improvement among employees.
- **Skilled Workforce:** Helps companies build a more skilled and capable workforce.
- **Enhanced Productivity:** Increases productivity by ensuring employees are well-trained and efficient.
- **Improved Safety Compliance:** Ensures that employees are up-to-date with the latest safety protocols, reducing workplace accidents.
- **Employee Retention:** Enhances employee satisfaction and retention by providing clear career advancement opportunities.
- **Competitive Advantage:** Provides a competitive advantage by having a highly skilled and knowledgeable workforce.
- **Reduced Training Costs:** Lowers overall training costs through a structured and efficient training program.

## Annual Audit

- The annual audit ensures the program evolves with industry changes.
- Maintains relevance and effectiveness with new technologies and standards
- Keeps the workforce updated with the latest industry practices.

The IEC Dallas and Fort Worth E-Rating System is a pivotal tool in facilitating the professional growth of electricians while providing employers with a structured framework for workforce development. By promoting safety, skill advancement, and effective communication, the E-Rating System enhances both practical quality and safety within the electrical industry. This system, with its detailed competencies and milestones, clear career progression routes, and focus on continuous learning, ensures that both employees and employers can thrive. The annual audit further ensures the program's relevance and effectiveness, keeping the workforce up-to-date with the latest industry practices. Overall, the E-Rating System is essential in building a skilled, safe, and efficient electrical workforce, benefiting the entire industry.



**JOB CODE:** E1

**JOB TITLE:** Electrician 1

**SCOPE OF WORK:**

An E1 Electrician is an entry-level apprentice in the electrical field. An E1 will assist an experienced electrician in the installation process of electrical equipment. They may also be responsible for jobsite housekeeping, tool and equipment maintenance, simple installations, and general labor.

**PRIMARY DUTIES AND RESPONSIBILITIES:**

- Helps in securing, relocating, organizing materials, small tools, and equipment from and back to appropriate storage areas.
- Keeps work area clean by collecting and disposing of scrap, excess materials, and refuse.
- Assists in pulling wire, lifting, hoisting, and positioning materials.
- Use of hand tools such as Screwdriver, Hammer, Pliers, Shovel etc.
- Install basic electrical installations.
- Follows company safety and employee policies.
- DOES NOT WORK ON ENERGIZED CIRCUITS OR EQUIPMENT.

**POSITION REQUIREMENTS:**

**Licenses:**

- Current Driver's License.
- Must apply for an Apprentice License through TDLR.

**Education:**

- High School Graduate, GED or equivalent.

**Experience:**

- No previous electrical experience is required.

**Skills:**

- Basic math knowledge.
- Attention to detail.
- Problem solving skills.
- Communication skills.
- Safety awareness.

**Transportation:**

- Reliable Transportation.



## **WORK ENVIRONMENT:**

- This job operates in a client project environment with potential exposure to employees, subcontractors, and trades.
- May work inside or outside while wearing all required personal protective equipment.
- Potential exposure to hot and cold temperatures or inclement weather conditions.
- Possible exposure to noise conditions.
- May work in restrictive or confined spaces.
- May work on slippery or uneven surfaces.
- May work at heights such as Ladders, Scaffolding, Leading Edges, etc.

## **PHYSICAL DEMANDS**

- Ability to handle materials and/or equipment up to 50 lbs.
- Ability to perform actions for extended amounts of time such as bending, kneeling, squatting, climbing, walking, push, pull, reach etc.
- Ability to wear personal tools during your work.
- Ability to perform repetitive tasks.

## **LEARNING OBJECTIVE: E1**

1. Understanding of basic electrical material
2. Basic math skills, Ohm's Law.
3. Understanding of GFCI's and AFCI's
4. Introduction to the NFPA 70 NEC Code Book
5. Understanding of parallel and series circuits.
6. Bend conduit by hand with hand benders.
7. Utilize power tools per the safety standards of that tool.
8. Task specific safety awareness such as Trenching & Excavation, Ladder, Fall Protection, etc.
9. Policy Handbook, Haz-Com Policy, and Lockout/Tagout Policy.
10. Operate power tools / equipment.
11. Read and understand instructional manuals, work site directions, and written instructions.



**SAFETY FOCUS TOPICS: E1**

- Personal Protective Equipment
- Fall Protection Awareness
- Electrical Safety – Test Before You Touch
- Lock Out / Tag Out – Simple
- Ladder Safety
- Struck-by / Caught Between Hazard Awareness
- Slips, Trips & Falls
- Housekeeping
- Hand & Power Tool Safety Awareness
- Ergonomics – Sprain / Strain Prevention
- Laceration Prevention Awareness
- Inclement Weather Hazard Awareness

**PROMOTES TO:** Electrician 2      E2



**JOB CODE:** E2

**JOB TITLE:** Electrician 2

**SCOPE OF WORK:**

An E2 Electrician is an entry-level apprentice in the electrical field. An E2 will assist an experienced electrician in installing electrical equipment. They may also be responsible for job site housekeeping, tool, and equipment maintenance, simple installations, and general labor.

**PRIMARY DUTIES AND RESPONSIBILITIES:**

- Helps in securing, relocating, organizing materials, small tools, and equipment from and back to appropriate storage areas.
- Proficient with reading and/or gathering information from National Electrical Code (NEC) book.
- Able to identify and name electrical materials on projects.
- Able to read a tape measurer proficiently.
- Keeps work area clean by collecting and disposing of scrap, excess materials, and refuse.
- Assists in pulling wire, lifting, hoisting, and positioning materials.
- Use of hand tools such as Screwdriver, Hammer, Pliers, Shovel etc.
- Install basic electrical installations to include plugs, switches, and breakers.
- Assists with blueprint reading and understanding of branch circuitry, symbols, and colors.
- Execute company safety and employee policies provided.
- DOES NOT WORK ON ENERGIZED CIRCUITS OR EQUIPMENT.

**POSITION REQUIREMENTS:**

**Licenses:**

- Current Driver's License.
- Valid Apprentice License through TDLR required.

**Education:**

- High School Graduate, GED or equivalent.

**Experience:**

- Completed competencies of an Electrician 1 (E1)

**Skill:**

- Basic math knowledge.
- Attention to detail.
- Problem solving skills.
- Communication skills.
- Safety awareness.

**Transportation:**

- Reliable Transportation.



**WORK ENVIRONMENT:**

- This job operates in a client project environment with potential exposure to employees, subcontractors, and trades.
- May work inside or outside while wearing all required personal protective equipment.
- Potential exposure to hot and cold temperatures or inclement weather conditions.
- Possible exposure to noise conditions.
- May work in restrictive or confined spaces.
- May work on slippery or uneven surfaces.
- May work at heights such as Ladders, Scaffolding, Leading Edges, etc.

**PHYSICAL DEMANDS**

- Ability to handle materials and/or equipment up to 50 lbs.
- Ability to perform actions for extended amounts of time such as bending, kneeling, squatting, climbing, walking, push, pull, reach etc.
- Ability to wear personal tools during your work.
- Ability to perform repetitive tasks.

**LEARNING OBJECTIVE: E2**

- Basic Blueprint Reading
  - Print reading symbols, branch circuitry, color identification
  - Panel schedule (basics)
  - Lighting and Power drawing awareness (basics)
  - Service and Distribution drawing awareness (basics)
  - Site / Civil, Architectural, and Structural Drawings (basics)
- General knowledge of NFPA 70, NEC Code Book
  - Articles 90 – 480
  - Articles 500 – 506
  - Article 690
  - Article 695
  - Articles 700 – 705
- Mathematics
  - Sizing of circuits, OCPD's, Grounds and Ground conductors
  - Conduit fill and derating.
- Electrical Theory
  - Understand magnetism.
  - Inductance and Impedance
  - Transformer theory, types, and calculations.
  - Power Generation, Transmission, and Distribution basics.
  - Single phase and Three Phase Transformers
  - Voltage Drop

**SAFETY FOCUS TOPICS: E2**

- Hazard Identification / JHA Understanding
- Confined Space Hazard Awareness
- Lock Out / Tag Out – Complex Understanding
- Equipment Awareness – MEWP, Trenchers, Skid-Steer, etc.
- Scaffolding Awareness
- Trenching & Excavation Safety Awareness
- Stop Work Authority

**PROMOTES TO: Electrician 3 E3**



**JOB CODE: E3    JOB TITLE:    Electrician 3**

**SCOPE OF WORK:**

An E3 Electrician is an apprentice electrician that is transitioning to a formal leadership role, on the way to becoming a licensed electrician. An E3 will assist an experienced electrician and may be responsible for overseeing lower E-Ratings work in the installation process of electrical equipment for a particular day. They may also be responsible for hazard identification, updating material list, delegation of simple tasks to a helper, understanding RFI's, jobsite housekeeping, tool and equipment maintenance, simple installations, and general labor.

**PRIMARY DUTIES AND RESPONSIBILITIES:**

- Helps in securing, relocating, organizing materials, small tools, and equipment from and back to appropriate storage areas.
- Proficient with reading and/or gathering information from National Electrical Code (NEC) book.
- Able to delegate work to a helper(s) and oversee their completion.
- Able to complete daily tasks provided by field leadership.
- Able to keep up with updated prints and RFI's.
- Keeps work area clean by collecting and disposing of scrap, excess materials, and refuse.
- Assists in pulling wire, lifting, hoisting, and positioning materials.
- Use hand tools such as Screwdriver, Hammer, Pliers, Shovel etc.
- Communicate with field leadership about progress and needs for their specific project.
- Proficient with blueprint reading and understanding of branch circuitry, symbols, and colors.
- Follows company safety and employee policies.
- DOES NOT WORK ON ENERGIZED CIRCUITS OR EQUIPMENT.

**POSITION REQUIREMENTS:**

**Licenses:**

- Current Driver's License.
- Must apply for an Apprentice License through TDLR.

**Education:**

- High School Graduate, GED or equivalent.

**Experience:**

- Completed competencies of an Electrician 2 (E2)

**Skills:**

- Basic math knowledge.
- Attention to detail.
- Problem solving skills.
- Communication skills.
- Safety awareness.

**Transportation:**

- Reliable Transportation.





## WORK ENVIRONMENT:

- This job operates in a client project environment with potential exposure to employees, subcontractors, and trades.
- May work inside or outside while wearing all required personal protective equipment.
- Potential exposure to hot and cold temperatures or inclement weather conditions.
- Possible exposure to noise conditions.
- May work in restrictive or confined spaces.
- May work on slippery or uneven surfaces.
- May work at heights such as Ladders, Scaffolding, Leading Edges, etc.
  
- Ability to handle materials and/or equipment up to 50 lbs.
- Ability to perform actions for extended amounts of time such as bending, kneeling, squatting, climbing, walking, push, pull, reach etc.
- Ability to wear personal tools during your work.
- Ability to perform repetitive tasks.

## LEARNING OBJECTIVE: E3

1. Proficient Blueprint Reading
  - i. Print reading symbols, branch circuitry, color identification
  - ii. Panel schedules
  - iii. Lighting and Power drawings
  - iv. Service and Distribution drawings
2. NFPA 70, NEC Code Book - Grounding
  - i. All jumpers
  - ii. Grounding electrodes and conductors to electrodes
  - iii. Equipment grounding conductor(s)
  - iv. Grounding specific equipment and conditions.
3. Motors
  - i. DC, AC Single Phase, 3 Phase
  - ii. Branch Circuits
  - iii. SC and GF Protection
  - iv. Overloads
  - v. Motor Feeder Conductors
  - vi. AC Equipment
  - vii. Fire Pumps
4. Control Circuits
  - i. Ladder Logic
  - ii. Manual and Automatic Control Devices
  - iii. Relays and Limit Switches
  - iv. Timing Relays
  - v. Magnetic Motor Starters
  - vi. Jogging Circuits
5. Limited Energy / Low Voltage Systems
6. Foundation of the Productive Worker
7. Supervisor skill development



**SAFETY FOCUS TOPICS: E3**

- **Confined Space Supervisor – Authorized**
- **Electrical Safety – NFPA 70E Awareness**
- **CPR / First Aid / AED Training**
- **Lock Out / Tag Out – Complex Proficient**

**PROMOTES TO:**                      Electrician 4 E4



**JOB CODE:** E4

**JOB TITLE:** Electrician 4

**SCOPE OF WORK:**

An E4 Electrician is an apprentice electrician who is in a leadership role on projects. An E4 will assist an experienced electrician and may be responsible for overseeing lower E-ratings work in the installation process of electrical equipment for a particular day and subcontractor work. They are responsible for hazard identification, updating the material lists, delegating simple tasks to a helper(s), understanding RFI's, job site housekeeping, tool, and equipment maintenance, simple installations, and general labor needs.

**PRIMARY DUTIES AND RESPONSIBILITIES:**

- Helps secure, relocate, and organize materials, small tools, and equipment from and back to appropriate storage areas.
- Proficient with reading and/or gathering information from the National Electrical Code (NEC) book.
- Able to delegate work to a helper(s) and oversee their completion.
- Able to complete daily tasks provided by field leadership.
- Able to keep up with updated prints and RFI's.
- Keeps work area clean by collecting and disposing of scrap, excess materials, and refuse.
- Assists in pulling wire, lifting, hoisting, and positioning materials.
- Use of hand tools such as Screwdriver, Hammer, Pliers, Shovel etc.
- Communicate with field leadership about progress and needs for their specific project.
- Proficient with blueprint reading and understanding branch circuitry, symbols, and colors.
- Ensures employee/subcontractor has proper training for tasks.
- Follows company safety and employee policies.
- DOES NOT WORK ON ENERGIZED CIRCUITS OR EQUIPMENT.

**POSITION REQUIREMENTS:**

**Licenses:**

- Current Driver's License.
- Must have an Apprentice License through TDLR.

**Education:**

- High School Graduate, GED or equivalent.

**Experience:**

- Completed competencies of an Electrician 3 (E3)

**Skill:**

- Basic math knowledge.
- Attention to detail.
- Problem solving skills.
- Communication skills.
- Safety awareness.

**Transportation:**

- Reliable Transportation.



#### **WORK ENVIRONMENT:**

- This job operates in a client project environment with potential exposure to employees, subcontractors, and trades.
- May work inside or outside while wearing all required personal protective equipment.
- Potential exposure to hot and cold temperatures or inclement weather conditions.
- Possible exposure to noise conditions.
- May work in restrictive or confined spaces.
- May work on slippery or uneven surfaces.
- May work at heights such as Ladders, Scaffolding, Leading Edges, etc.

#### **PHYSICAL DEMANDS**

- Ability to handle materials and/or equipment up to 50 lbs.
- Ability to perform actions for extended amounts of time such as bending, kneeling, squatting, climbing, walking, push, pull, reach etc.
- Ability to wear personal tools during your work.
- Ability to perform repetitive tasks.

#### **LEARNING OBJECTIVE: E4**

1. Proficient Blueprint Reading
  - i. Print reading symbols, branch circuitry, color identification
  - ii. Panel schedules
  - iii. Lighting and Power drawings
  - iv. Service and Distribution drawings
2. Proficient NFPA 70, NEC Code Book Knowledge
3. Energized Electrical Work Processes, NFPA 70E Standard
4. Power Distribution Systems
5. Advanced Motor Controls
6. Motor Drives
7. Programmable Controllers
8. Energy Management
9. Fire Suppression Systems
10. In Depth Code Review and Calculations
  - i. Dwelling Units
  - ii. Commercial Spaces
  - iii. Raceways and Conductors
  - iv. Equipment and Workspace
  - v. Hazardous Locations
  - vi. Alternative Energy and Emergency Power Systems
  - vii. Motors
  - viii. Limited Energy and Low Voltage Systems
11. Foundation of the Productive Worker
12. Supervisor skill development



**SAFETY FOCUS TOPICS: E4**

- **Electrical Safety – NFPA 70E, MOP's, Permits – Proficient**
- **Lock Out / Tag Out – Complex Proficient**
- **Hazard Recognition / JHA – Proficient**
- **Confined Space – Proficient**
- **Fall Protection – Proficient**
- **Trenching & Excavation Safety – Proficient**
- **Reporting Workplace Injures / Near-Misses –**

**Proficient PROMOTES TO:** Licensed Journeyman

Electrician