

# CHAPTER 17



## CONSTRUCTION ELECTRICIAN (CE)

NAVPERS 18068F-17H  
Change 100

Updated: October 2024

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NAVY ENLISTED OCCUPATIONAL STANDARD

FOR

CONSTRUCTION ELECTRICIAN (CE)



SCOPE OF RATING

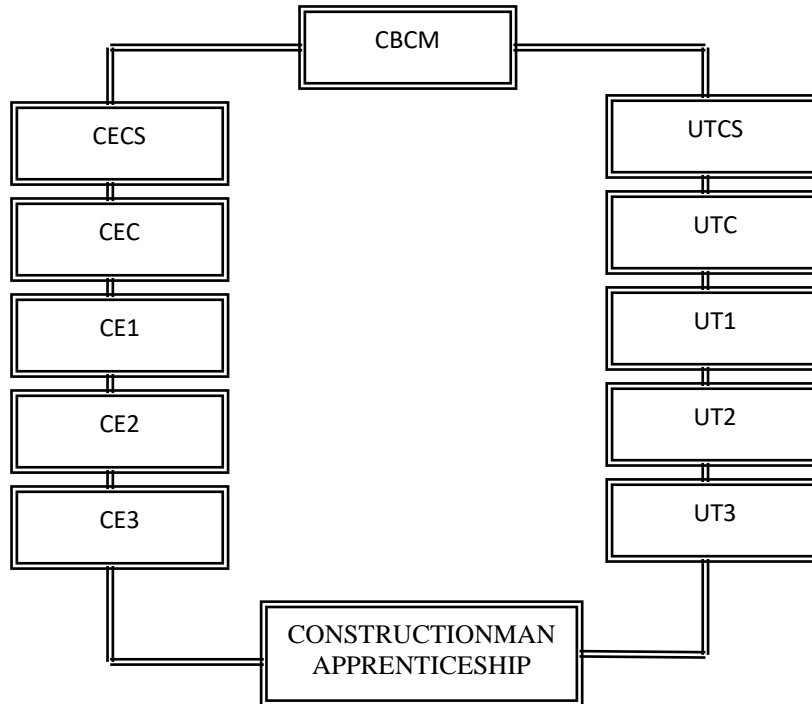
Construction Electricians (CE) install and repair interior/exterior wiring and overhead and underground primary and secondary distribution systems using conduit, raceways, and direct burial cables; set up, operate, and service power generation electrical equipment; climb poles and towers utilizing lineman equipment; install and service electrical equipment; maintain individual combat readiness, and perform tasks required in contingency operations and disaster preparedness or Humanitarian Assistance Disaster Recovery (HADR) operations.

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This Occupational Standard is to be incorporated in Volume I, Part B, of the Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards (NAVPERS 18068F) as Chapter 17.

## GENERAL INFORMATION

### CAREER PATTERN



Normal path of advancement to Chief Warrant Officer and Limited Duty Officer categories can be found in OPNAVINST 1420.1.

For rating entry requirements, refer to MILPERSMAN 1306-618.

### SAFETY

**The observance of Operational Risk Management (ORM) and proper safety precautions in all areas is an integral part of each billet and the responsibility of every Sailor; therefore, it is a universal requirement for all ratings.**

\*Career path updated to reflect rating name change to Seabee Master Chief (CBCM) – NAVADMIN 054/21 refers

**Job Title****Construction Electrician****Job Code****002599****Job Family**

Construction and Extraction

**NOC**

TBD

**Short Title (30 Characters)**

CONSTRUCTION ELECTRICIAN

**Short Title (14 Characters)**

CONSTRUCT ELEC

**Pay Plan**

Enlisted

**Career Field**

CE

**Other Relationships and Rules**

NEC BXXX series and other NECs as assigned

**Job Description**

Construction Electricians (CE) interpret electrical plans and specifications, install and repair interior/exterior wiring and overhead and underground primary and secondary distribution systems using conduit, raceways, and direct burial cables; set up, operate, and service electrical equipment; climb poles and towers utilizing lineman equipment; install and service electrical equipment (e.g., transformers, switching equipment, protective devices, motors and controllers, conventional and alternative electrical systems, portable generators and distribution systems, Uninterruptable Power Supply (UPS) devices, telephone/communication systems, security and portable lighting systems, etc.); act as project managers, planning, staffing, directing, and controlling multiple construction projects to include problem solving, planning, estimating, scheduling, controlling cost, and managing personnel; ensure compliance with specifications, code requirements, plans, and contracts; prepare progress reports, time records, construction schedules, and material, labor, tool and equipment estimates for construction projects; and act as project supervisors and trainers for junior personnel.

**DoD Relationship****O\*NET Relationship****Group Title**

Electricians

**DoD Code**

172100

**Occupation Title**

Electricians

**SOC Code**

47-2111.00

**Job Family**

Construction and Extraction

**Skills***Equipment Selection**Installation**Complex Problem Solving**Management of Personnel Resources**Quality Control Analysis**Management of Material Resources**Systems Evaluation**Critical Thinking**Repairing**Judgment and Decision Making***Abilities***Deductive Reasoning**Problem Sensitivity**Manual Dexterity**Oral Expression**Visualization**Information Ordering**Inductive Reasoning**Written Expression**Written Comprehension**Selective Attention***CONSTRUCTION MANAGEMENT****Paygrade****Task Type****Task Statements**

E5

CORE

Conduct construction project turnovers

E6

NON-CORE

Conduct Three-Phase Quality Control inspections

E4

CORE

Develop construction activity summary sheets

E4

CORE

Develop construction estimates

E5

CORE

Develop construction project packages

E4

CORE

Develop construction project safety plans

E4

CORE

Develop construction project sketches, diagrams, and shop drawings

E4

CORE

Develop environmental protection plans

E4

CORE

Develop master activities listing

E4

CORE

Develop project Three-Phase Quality Control plans

E5

CORE

Establish construction site layouts

E5

CORE

Input project data into construction management software and tools

E4

CORE

Inspect construction materials

E4

CORE

Interpret construction project sketches, diagrams, and shop drawings

E4

CORE

Inventory project tools and materials

E5

CORE

Lead construction project crews

E6

CORE

Manage construction project resources

### CONSTRUCTION MANAGEMENT (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Manage construction project safety plans
E6	CORE	Manage construction projects
E5	CORE	Manage job site construction operations (e.g., Quality Control (QC) and safety plan implementation, job site information board, level III chart, etc.)
E6	CORE	Manage project Quality Control (QC) plans
E6	CORE	Manage Three-Phase Quality Control process
E6	NON-CORE	Monitor construction project contracts
E5	CORE	Supervise construction project crews
E5	CORE	Supervise construction project safety operations
E5	CORE	Supervise environmental protection plans
E5	CORE	Supervise planning and estimating operations
E5	CORE	Supervise project Three-Phase Quality Control process
E6	CORE	Validate construction project packages
E5	NON-CORE	Validate project surveys and elevation data

### ELECTRICAL AND ELECTRONIC SYSTEM COMPONENTS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Install electrical components and devices
E4	CORE	Install electronic components and devices (e.g., surge protector, sensory equipment, etc.)
E4	NON-CORE	Install Uninterruptable Power Supplies (UPS)
E4	CORE	Interpret electrical and electronic system component drawings and specifications
E5	NON-CORE	Maintain Uninterruptable Power Supplies (UPS)
E4	CORE	Repair electrical equipment
E5	CORE	Repair electronic components and devices (e.g., surge protector, sensory equipment, etc.)
E5	NON-CORE	Repair Uninterruptable Power Supplies (UPS)
E4	NON-CORE	Replace electronic components and devices (e.g., surge protector, sensory equipment, etc.)
E4	CORE	Test electrical equipment
E4	CORE	Test electronic components and devices (e.g., surge protector, sensory equipment, etc.)
E4	NON-CORE	Test Uninterruptable Power Supplies (UPS)
E4	CORE	Troubleshoot electrical equipment
E4	CORE	Troubleshoot electronic components and devices (e.g., surge protector, sensory equipment, etc.)
E5	NON-CORE	Troubleshoot Uninterruptable Power Supplies (UPS)

### EXPEDITIONARY CONSTRUCTION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	NON-CORE	Assess airfield damages
E6	NON-CORE	Assess pier damages
E4	NON-CORE	Install airfield lighting systems

### EXPEDITIONARY CONSTRUCTION (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E6	NON-CORE	Plan Airfield Damage Repairs (ADR)
E6	NON-CORE	Plan Pier Damage Repairs (PDR)
E4	NON-CORE	Repair airfield lighting systems
E4	NON-CORE	Repair damaged airfields
E4	NON-CORE	Repair damaged piers
E7	NON-CORE	Supervise Airfield Damage Repair (ADR) operations
E7	NON-CORE	Supervise Pier Damage Repair (PDR) operations
E4	NON-CORE	Test airfield lighting systems
E5	NON-CORE	Troubleshoot airfield lighting systems

### FACILITIES MANAGEMENT

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Inspect facility utility systems
E7	NON-CORE	Manage facility maintenance contracts
E7	CORE	Manage facility maintenance operations (i.e., Camp Maintenance)
E4	CORE	Perform facility corrective maintenance
E4	CORE	Perform facility preventive maintenance
E6	CORE	Supervise facility maintenance operations (i.e., Camp Maintenance)

### INTERIOR AND EXTERIOR WIRING

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Calculate electrical load capacities for conductors
E4	CORE	Calculate electrical load requirements
E4	CORE	Calculate fill capacities for raceways and enclosures
E5	CORE	Develop electrical wiring diagrams
E5	CORE	Implement interior and exterior sketches, schematics, and wiring diagrams (e.g., branch circuits, panel schedules, etc.)
E4	CORE	Install electrical conductors
E4	CORE	Install electrical conduits and raceways
E4	CORE	Install electrical fixtures and devices
E4	CORE	Install electrical power panels and enclosures
E4	CORE	Install interior and exterior electrical grounding and bonding systems
E4	CORE	Install service entrance equipment
E4	CORE	Interpret interior and exterior wiring drawings and specifications
E4	CORE	Repair interior and exterior wiring systems
E5	CORE	Supervise interior and exterior wiring operational system checks (e.g., tests, repairs, troubleshooting, etc.)
E5	CORE	Supervise interior and exterior wiring system installations
E4	CORE	Troubleshoot interior and exterior wiring systems

## LIGHTING

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Calculate area lighting requirements
E4	CORE	Conduct lighting systems operational checks (e.g., area, commercial, emergency, security, industrial, etc.)
E4	CORE	Develop lighting sketches and diagrams
E4	CORE	Install area lighting systems
E4	CORE	Install portable lighting
E4	CORE	Install street lighting systems
E4	CORE	Install temporary lighting systems
E4	CORE	Interpret lighting drawings and specifications
E4	CORE	Repair lighting systems (e.g., area, commercial, emergency, security, industrial, etc.)
E5	CORE	Repair portable lighting (i.e., light plants, temporary lighting)
E4	CORE	Repair street lighting systems
E5	CORE	Supervise lighting system installations
E5	CORE	Supervise lighting system operational system checks (i.e., tests, repairs, troubleshooting)
E4	CORE	Test lighting systems (e.g., area, commercial, emergency, security, industrial, etc.)
E4	CORE	Test portable lighting (i.e., light plants, temporary lighting)
E4	CORE	Test street lighting system operations
E4	CORE	Troubleshoot lighting systems (e.g., area, commercial, emergency, security, industrial, etc.)
E4	CORE	Troubleshoot portable lighting (i.e., light plants, temporary lighting)
E5	CORE	Troubleshoot street lighting systems

## MOTORS AND CONTROLLERS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Calculate motors and controllers requirements
E4	CORE	Install electric motor systems (e.g., motor controls, protective devices, etc.)
E4	CORE	Interpret motors and controllers drawings and specifications
E4	CORE	Repair electrical motor systems (e.g., motor controls, protective devices, etc.)
E5	CORE	Supervise electric motor system installations (e.g., motor controls, protective devices, etc.)
E5	CORE	Supervise electric motor system operational checks (e.g., tests, repairs, troubleshooting, etc.)
E4	CORE	Test electric motor systems (e.g., motor controls, protective devices, etc.)
E4	CORE	Troubleshoot electric motor systems (e.g., motor controls, protective devices, etc.)

## POWER DISTRIBUTION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Calculate power distribution load requirements
E4	CORE	Climb utility poles
E5	CORE	Conduct aerial work (e.g., lifts, bucket truck, platforms, etc.)
E5	CORE	Develop power distribution system requirements



### **POWER DISTRIBUTION (CONT'D)**

<b><u>Paygrade</u></b>	<b><u>Task Type</u></b>	<b><u>Task Statements</u></b>
E5	CORE	Implement power distribution sketches and diagrams (e.g., camp/expeditionary layout, project site, etc.)
E4	NON-CORE	Install electrical manholes
E4	CORE	Install facilities grounding systems
E4	CORE	Install overhead power distribution systems
E4	CORE	Install power distribution grounding systems
E4	CORE	Install power distribution protection system components
E5	NON-CORE	Install power distribution switchgear (e.g., expeditionary construction sites, facilities, etc.)
E4	CORE	Install power distribution transformers
E4	CORE	Install service drops
E4	CORE	Install underground power distribution systems
E4	NON-CORE	Install utility poles using auger trucks
E5	CORE	Interpret power distribution drawings and specifications
E4	CORE	Locate existing underground electrical utilities
E4	CORE	Maintain electrical manholes
E4	CORE	Maintain facility grounding systems
E4	CORE	Maintain overhead and underground power distribution systems
E4	CORE	Maintain power distribution grounding systems
E5	NON-CORE	Repair direct burial cables
E5	NON-CORE	Repair power distribution switchgear (e.g., expeditionary construction sites, facilities, etc.)
E5	CORE	Repair underground power distribution systems
E4	CORE	Replace overhead power distribution systems
E4	CORE	Rescue personnel from aerial positions
E5	CORE	Supervise electrical manhole operations
E5	CORE	Supervise facility grounding system operations
E5	CORE	Supervise overhead and underground power distribution operational system checks (i.e., tests, repairs, troubleshooting)
E5	CORE	Supervise overhead and underground power distribution systems installations
E7	CORE	Supervise overhead and underground power distribution systems operations
E5	NON-CORE	Supervise power distribution switchgear (e.g., expeditionary construction sites, facilities, etc.)
E5	CORE	Supervise power distribution transformer installations
E5	NON-CORE	Supervise utility pole installations using auger truck
E4	CORE	Test overhead and underground power distribution systems
E4	CORE	Test power distribution grounding systems
E4	CORE	Test power distribution grounding systems for resistance to earth
E4	NON-CORE	Test power distribution switchgear (e.g., expeditionary construction sites, facilities, etc.)

**POWER DISTRIBUTION (CONT'D)**

<b><u>Paygrade</u></b>	<b><u>Task Type</u></b>	<b><u>Task Statements</u></b>
E4	CORE	Test power distribution transformer functionality
E5	CORE	Troubleshoot overhead and underground power distribution systems

**POWER GENERATION**

<b><u>Paygrade</u></b>	<b><u>Task Type</u></b>	<b><u>Task Statements</u></b>
E5	CORE	Calculate power generation load requirements
E4	CORE	Conduct power generation operational system checks
E4	NON-CORE	Install alternative power sources (e.g., solar, wind power, etc.)
E4	CORE	Install power generation systems
E4	CORE	Provide power supplies to loads using generators
E5	NON-CORE	Repair alternative power sources (e.g., solar, wind power, etc.)
E5	CORE	Repair power generation systems
E5	CORE	Supervise power generation installations
E5	CORE	Supervise power generation operations (e.g., tests, repairs, troubleshooting, etc.)
E4	NON-CORE	Test alternative power sources (e.g., solar, wind power, etc.)
E4	CORE	Troubleshoot power generation systems