

# CHAPTER 17



## CONSTRUCTION ELECTRICIAN (CE)

NAVPERS 18068F-17G  
Change 88

Updated: October 2021

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NAVY ENLISTED OCCUPATIONAL STANDARD

FOR

CONSTRUCTION ELECTRICIAN (CE)



SCOPE OF RATING

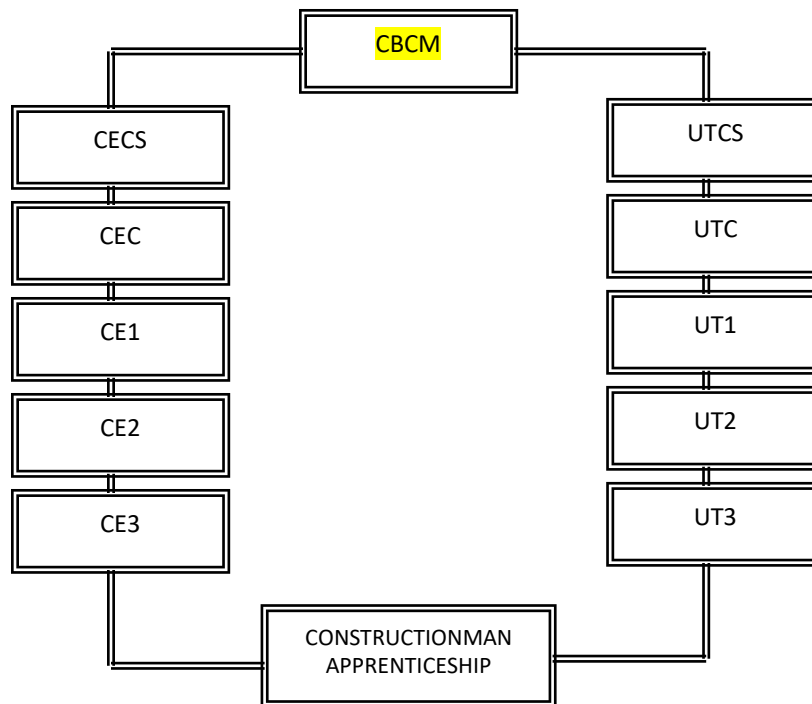
Construction Electricians (CE) install and repair interior/exterior wiring and overhead and underground primary and secondary distribution systems using conduit, raceways, and direct burial cable; set up, operate, and service power generation electrical equipment; climb poles and towers utilizing lineman 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, 717B, 718B, 804G, 833A or 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 cable; setup, operate, and service electrical equipment; climb poles and towers utilizing lineman equipment; install and service electrical equipment (i.e., transformers, switching equipment, protective devices, motors and controllers, conventional and alternative electrical systems, portable generators and distribution systems, Uninterruptable Power Supply (UPS), telephone/communication systems, security and portable lighting systems); as project managers, CEs plan, staff, direct, and control multiple construction projects to include problem solving, planning, estimating, scheduling, cost control and personnel management, ensuring 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**Group Title

Electricians

DoD Code

172100

**O\*NET Relationship**Occupation Title

Electricians

SOC Code

47-2111.00

Job Family

Construction and Extraction

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

E6

NON-CORE

Conduct three-phase quality control inspections

E5

CORE

Develop construction activities

E5

CORE

Develop construction environmental protection plans

E4

CORE

Develop construction estimates

E5

CORE

Develop construction project packages

E4

CORE

Develop construction project sketches, diagrams, and shop drawings

E5

CORE

Develop construction safety plans

E5

CORE

Develop master activities

E5

CORE

Develop project three-phase quality control plans

E6

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 crew

E6

CORE

Manage construction project resources

E6

CORE

Manage construction projects

### CONSTRUCTION MANAGEMENT (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Manage construction safety plans
E6	CORE	Manage job site construction operations (e.g., quality control and safety plan implementation, job site information board, level III chart, etc.)
E6	CORE	Manage project quality control 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
E6	CORE	Supervise project three-phase quality control process
E5	CORE	Turnover construction project
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>
E5	CORE	Develop electrical and electronic system component wiring diagrams
E4	CORE	Install electrical components and devices
E4	CORE	Install electronic components and devices (e.g., surge protector, sensory equipment, etc.)
E4	CORE	Interpret electrical and electronic system component drawings and specifications
E4	CORE	Repair electrical equipment
E5	CORE	Repair 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	CORE	Troubleshoot electrical equipment
E5	CORE	Troubleshoot electronic components and devices (e.g., surge protector, sensory equipment, etc.)

### FACILITIES MANAGEMENT

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Conduct facilities corrective maintenance
E4	CORE	Conduct facilities preventive maintenance
E4	CORE	Inspect facilities systems
E7	CORE	Manage facilities maintenance contracts
E7	CORE	Manage facilities maintenance operations (e.g., Camp Maintenance, 3M, MAXIMO)
E6	CORE	Supervise facilities maintenance operations (e.g., Camp Maintenance, 3M, MAXIMO)

## 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	Implement interior and exterior sketches, schematics, and wiring diagrams (i.e., branch circuits)
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)
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)
E4	CORE	Develop lighting sketches and diagrams
E4	NON-CORE	Install airfield lighting systems
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
E5	NON-CORE	Repair airfield lighting systems
E5	CORE	Repair lighting systems (e.g., area, commercial, emergency, security, industrial)
E5	CORE	Repair portable lighting
E4	CORE	Repair street lighting systems
E4	CORE	Repair temporary lighting systems
E5	CORE	Supervise lighting system installations
E5	CORE	Supervise lighting system operational system checks (e.g., tests, repairs, troubleshooting)
E5	NON-CORE	Test airfield lighting systems
E4	CORE	Test portable lighting
E4	CORE	Test street lighting system operations

### **LIGHTING (CONT'D)**

<b><u>Paygrade</u></b>	<b><u>Task Type</u></b>	<b><u>Task Statements</u></b>
E4	CORE	Test temporary lighting systems
E5	NON-CORE	Troubleshoot airfield lighting systems
E5	CORE	Troubleshoot lighting systems (e.g., area, commercial, emergency, security, industrial)
E5	CORE	Troubleshoot street lighting systems
E4	CORE	Troubleshoot temporary lighting systems

### **MOTORS AND CONTROLLERS**

<b><u>Paygrade</u></b>	<b><u>Task Type</u></b>	<b><u>Task Statements</u></b>
E5	CORE	Calculate motors and controllers requirements
E5	CORE	Develop motors and controllers wiring diagrams
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)
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**

<b><u>Paygrade</u></b>	<b><u>Task Type</u></b>	<b><u>Task Statements</u></b>
E5	CORE	Calculate power distribution load requirements
E4	CORE	Climb utility poles
E4	CORE	Conduct aerial work using bucket trucks
E5	CORE	Develop power distribution system requirements
E5	CORE	Implement power distribution sketches and diagrams (e.g., camp/expeditionary layout, project site, etc.)
E5	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 (i.e., expeditionary construction, facilities)
E5	CORE	Install power distribution transformers
E4	CORE	Install service drops
E4	CORE	Install underground power distribution systems
E4	CORE	Install utility poles using auger truck
E4	CORE	Interpret power distribution drawings and specifications
E4	CORE	Locate existing underground electrical utilities
E5	NON-CORE	Repair direct burial cables
E4	CORE	Repair overhead power distribution systems



### POWER DISTRIBUTION (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	NON-CORE	Repair power distribution switchgear (i.e., expeditionary construction, facilities)
E5	NON-CORE	Repair underground power distribution systems
E4	CORE	Rescue personnel from aerial positions
E5	CORE	Supervise overhead and underground power distribution operational system checks (e.g., tests, repairs, troubleshooting)
E5	CORE	Supervise overhead and underground power distribution systems installations
E4	CORE	Test overhead and underground power distribution systems
E4	CORE	Test power distribution grounding systems for resistance to earth
E5	NON-CORE	Test power distribution switchgear (i.e., expeditionary construction, facilities)
E4	CORE	Test power distribution transformer functionality

### POWER GENERATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
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)
E4	CORE	Install power generation systems
E5	NON-CORE	Install Uninterruptable Power Supply (UPS)
E5	NON-CORE	Maintain Uninterruptable Power Supply (UPS)
E4	CORE	Provide power supply to a load using generator
E5	NON-CORE	Repair alternative power sources (e.g., solar, wind power)
E5	CORE	Repair power generation systems
E5	NON-CORE	Repair Uninterruptable Power Supply (UPS)
E5	CORE	Supervise power generation installations
E5	CORE	Supervise power generation operations (e.g., tests, repairs, troubleshooting)
E4	NON-CORE	Test alternative power sources (e.g., solar, wind power)
E5	NON-CORE	Test Uninterruptable Power Supply (UPS)
E5	CORE	Troubleshoot power generation systems
E5	NON-CORE	Troubleshoot Uninterruptable Power Supply (UPS)