The Finest Tank Lining Available — Hydrastone cement

Light Duty Commercial Electric Water Heater

6-119 Gallon Capacity, up to 12 kW, Single Phase and Three Phase Open Delta

**Features**

- **Heavy Duty Construction**
  - Hydrastone cement lining provides longer tank life
  - Copper-silicon tappings cannot rust or corrode
  - High impact composite jacket eliminates damage during installation and transit and cannot rust or corrode

- **High Efficiency**
  - Polyurethane foam insulation reduces heat loss
  - Built-in heat trap lowers operating costs

- **Reliable**
  - Full five (5) year Non Pro-rated tank warranty is standard
  - Full ten (10) year Non Pro-rated tank warranty can be specified for extended protection

**APPLICATIONS**

- Office Buildings
- Schools
- Hospitals
- Industrial Facilities
- Hotels

A Long Lasting, Trouble-Free Water Heater

The Hubbell Model E water heater incorporates a number of features not found in other conventional heaters which makes it better suited to resist the highly corrosive effects of hot water. The heart of a Hubbell water heater is a superior storage vessel which utilizes a specially formulated Hydrastone cement lining, solid copper-silicon threaded tank openings and a built-in heat trap device, all of which ensure a longer lasting and energy efficient water heater.

When you specify and install a Hubbell Model E, you will have confidence in knowing that the owner will be provided with a long lasting, trouble-free water heater.

The Model E is an electric water heater with a long lasting Hydrastone cement lined storage tank.
Cement Lined Tanks Provide Longer Service Life

What is the most common reason why a water heater fails?

Failure of a tank’s protective lining allows water to come into direct contact with the steel tank causing it to corrode and leak.

Therefore, the type of protective lining is the single most important feature when determining the quality of any water heater. The ability of a lining to protect the steel tank is primarily based upon its thickness and complete coverage of all steel surfaces.

Two common internal tank linings are Glass & Cement.

<table>
<thead>
<tr>
<th>Glass</th>
<th>Cement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass lining is approximately 5 mils (.005&quot;) thick &amp; does not cover all internal surfaces. To compensate, all glass lined tanks require a sacrificial anode rod which must be periodically inspected and replaced.</td>
<td>Hydrastone cement lining is a minimum of 1/2&quot; thick (100 times thicker than glass lining) and is guaranteed to uniformly cover 100% of all internal tank surfaces. The result is a significantly longer lasting tank which does not require a sacrificial anode.</td>
</tr>
</tbody>
</table>

Threaded tapping material is critical for tank longevity.

Glass lined tanks are constructed with regular steel tappings which are continuously attacked by corrosive hot water due to the lack of glass lining on the internal threads. The Hubbell Model E water heater tank is constructed with solid non-ferrous copper-silicon tank tappings which are impervious to the corrosive effects of hot water.

The Hubbell Model E is a longer lasting water heater based upon the construction features found in the Hydrastone cement lined storage tank and the result is that when you specify and install a Hubbell Model E, you will have confidence in knowing that the owner will be provided with a trouble-free and long lasting water heater.

- **Thickness**
  Each Hubbell Model E storage tank is lined with a minimum of 1/2" thick Hydrastone cement to ensure protection of the steel tank.

- **Coverage**
  The Hydrastone cement lining covers a guaranteed 100% of all interior tank surfaces and is free from flaws or imperfections. Full coverage is achieved by injecting the precise amount of Hydrastone cement into each tank and then centrifugally spinning it at 250 RPM to ensure complete and uniform coverage of the lining on all interior surfaces.

- **Corrosion Resistance**
  Hydrastone cement is a specifically formulated high density lining designed to provide maximum protection from the corrosive effects of hot water.

- **Reduced Operating Costs**
  The Hubbell Model E water heater significantly reduces the total ownership cost of a water heater due to the longer life and maintenance-free benefits derived from a Hydrastone cement lined tank. Longer tank life is directly attributable to the unmatched tank protection provided by the Hydrastone cement lining and copper-silicon tappings. Additionally, the Model E reduces operating expenses by eliminating the periodic inspection and replacement costs associated with maintaining a sacrificial anode in a glass lined tank.
Model E Water Heater Specifications

### Tank

The Hubbell tank is all welded heavy steel construction designed for 150 psi working pressure and tested to 300 psi. Each tank is centrifugally lined with 1/2" thick seamless high density Hydrastone cement with guaranteed 100% coverage of all steel surfaces. All tank openings are non-ferrous solid copper-silicon and are resistant to the corrosive effects of hot water.

### Plumbing

3/4” combination cold water inlet and drain, with non-corrosive strata flow diffuser which prevents incoming cold water from mixing too rapidly with the hot water in the tank and assures delivery of more hot water - not lukewarm water.

A 3/4” hot water outlet with a uniquely designed built-in heat trap prevents heated water from radiating through the piping during standby periods.

### General Specifications

- **Tank:** Hydrastone cement Lined Steel
- **Capacities:** 6 thru 119 Gallons
- **Orientation:** Vertical
- **Volumes:** 120 thru 480 Volt
- **Phase:** 1 Φ or 3 Φ Open Delta
- **Inlet Size:** 3/4” Female NPT
- **Outlet Size:** 3/4” Male NPT
- **Drain Size:** 3/4” GHT
- **Relief Valve Size:** 3/4” Female NPT
- **Relief Valve Type:** T&P, 210°F, 150 psi
- **Thermostat Range:** 110-170°F (surface)

### Electrical

Copper sheathed immersion heating elements with low watt density for prolonged life - up to 6KW in 120, 208, 240, 277, 480 volt single phase (See chart for details). An adjustable surface thermostat operates in 110-170°F range.

Integral hi-limit with manual reset button for over-temperature protection is factory set at 190°F.

Upper and lower element configurations are factory wired for non-simultaneous operation.

### Insulation

Highly efficient thick polyurethane foam insulation meets or exceeds the requirements of ANSI/ASHRAE/IESNA 90.1-2007 standards for energy efficiency and heat loss.

### Jacket

The exterior protective jacket is constructed from high impact composite material which cannot rust or corrode and does not require painting.

### Optional Equipment

- **1.** Immersion thermostat specify 100-190°F or 30-110°F temperature range
- **2.** Immersion adjustable 100-240°F safety hi-limit cut out with manual reset
- **3.** Steel wall shelf for 6 thru 40 gallon models
- **4.** Combination temperature and pressure gauge: 2.5” dial, 70-250°F, 0-200 psi — specify if installed in tank or shipped loose for in line installation
- **5.** 1-1/4” Male NPT inlet and outlet water connections
- **6.** Solid (Copper-Alloy, Type 304L, Type 316L stainless steel) storage tank for maximum tank life
- **7.** Three phase open delta wiring (must be simultaneous operation), see page 5 for details
- **8.** Heating elements wired for simultaneous operation
- **9.** Full 10 Year Non Pro-Rated tank warranty
- **10.** Integrally welded seismic attachment points
- **11.** Off-peak wiring for load management savings
- **12.** Alternate voltages available including 380, 415, 440 and 600 volt, please consult factory
- **13.** ASME tank construction, please specify base model EA
- **14.** Horizontal construction available
- **15.** Foam insulation 3” thick for improved operating efficiency

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*Please note: optional equipment may impact overall dimensions and weight. Please request submittal drawing from factory.*
Outline Dimensions

1Φ Wattage and Dimensional Data

<table>
<thead>
<tr>
<th>Storage Capacity (Gallons)</th>
<th>Base Model Number</th>
<th>Standard Configurations</th>
<th>Alternate Configurations</th>
<th>Dimensions (Inches)</th>
<th>Shipping Weight (lbs.)</th>
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<tr>
<td></td>
<td></td>
<td>KW</td>
<td>Volts</td>
<td>1Φ</td>
<td>KW</td>
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<tr>
<td>6</td>
<td>E06</td>
<td>1.5</td>
<td>120, 240</td>
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<tr>
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<td>E10</td>
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<td>120, 240</td>
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<td>E20</td>
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<td>120, 240</td>
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<tr>
<td>50</td>
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<td>1.5</td>
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</table>

Notes:
1. 120 volt models are available in 1500, 2000, and 2500 Watts only.
2. The 6, 10, and 19 Gallon models are available in lower element design only. All other sizes have both upper and lower element banks of identical wattage and are wired for non-simultaneous operation.

Formula: 1 KW will heat 4.1 GPH at 100°F rise
**3Φ Wattage Data** (Not Available in 6, 10 or 19 Gallon Capacities)

<table>
<thead>
<tr>
<th>Total Wattage</th>
<th>Lower Element Watts</th>
<th>Upper Element Watts</th>
<th>Recovery GPH @ 100°F Rise</th>
<th>Available Tank Sizes</th>
<th>3 Phase Open Delta Amperage</th>
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<tr>
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<td>208 Volt 3 Phase</td>
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<tr>
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<td>30, 40, 50, 65, 80, 100, 119</td>
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<td>14.4</td>
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<td>65, 80, 100, 119</td>
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<td>80, 100, 119</td>
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<tr>
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<td>6000</td>
<td>6000</td>
<td>50</td>
<td></td>
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</table>

**Note:**
All 3 phase open delta water heaters are supplied with upper and lower heating elements that are wired for simultaneous operation. Due to the unbalanced load of a three phase open delta circuit, the amperage on one leg is higher. Circuit protection should be sized based on the amperage of the highest leg of the open delta (L3).

**Model E Number Designation**

![Diagram of Model E Number Designation]

- **Step 1**
  - Model: 
    - E = 2" Foam Insulation
    - M = 3" Foam Insulation
    - EA = Pressure Vessel is ASME Stamped

- **Step 2**
  - Storage Capacity: 6-119 U.S. Gallons

- **Step 3**
  - Upper and Lower KW: 1.5, 2, 3.5, 4, 4.5, 5, 6 (upper and lower KW must be the same)

- **Step 4**
  - Tank:
    - SL = Hydrastone Cement lined tank
    - CS = Solid copper-silicon tank
    - CN = Solid copper-nickel tank
    - SS = Solid stainless steel tank (specify 304L or 316L)

- **Step 5**
  - Voltage/Phase/Hertz:
    - 1 Φ Voltages: A = 120-1-60, RS = 208-1-60, S = 240-1-60, W = 277-1-60, T4S = 480-1-60
    - 3 Φ Open Delta: R = 208-3-60, T = 240-3-60, T3 = 380-3-50/60, T7 = 415-3-50/60, T5 = 440-3-60, T4 = 480-3-60

**Example:** E80-4.5-4.5SLS

Model E with a 2" foam insulation storage tank of 80 Gallons with 4.5KW Upper and lower heating elements. Tank is cement lined and operates at 240V, single phase, 60Hz power.

**Option Note**
Any and all optional equipment for a water heater must be called out in the written specifications. A model number in and of itself does not reflect any optional equipment selected.

The 6, 10, and 19 Gallon models are available in lower element design only. All other sizes have both upper and lower element banks of identical wattage and are wired for non-simultaneous operation.
GENERAL

Provide a quantity of __________ point-of-use electric water heater(s) Model No. ___________________________ as manufactured by HUBBELL Electric Heater Co., Stratford, CT. The entire unit is to be complete with all operating controls and require only plumbing and electrical service connections. The tank shall be all welded steel commercial construction designed for 150 psi working pressure and contain __________ gallons of storage. The tank is to be lined with seamless Hydrastone cement to a minimum thickness of 1/2" on 100% of all interior tank surfaces (☐ Optional Specification: tank to be fabricated from solid copper alloy, Type 304L or 316L Stainless Steel) and does not require any type of anodic protection. The tank shall be designed and fabricated with non-ferrous copper-silicon threaded tappings and non-ferrous inlet and outlet piping for maximum corrosion resistance. Steel tank tappings will not be acceptable. The entire tank is to be insulated with a minimum of 2" (☐ Optional Specification: 3") thick polyurethane foam insulation that exceeds the latest ASHRAE standard for stand-by heat loss. The complete heater shall be supplied with a high impact colorized composite protective jacket which cannot rust or corrode and does not require painting. The unit shall bear the UL listing mark certifying the entire water heater.

The cold water inlet shall be 3/4" Female NPT (☐ Optional Specification: 1 1/2" Male NPT) and include a non-corrosive strata-flow diffuser which prevents incoming cold water from mixing too rapidly with hot water in the tank. A 3/4" hose connection drain is supplied. The hot water outlet shall be 3/4" Male NPT (☐ Optional Specification: 1 1/2" Male NPT) and shall include a factory installed built-in heat trap to prevent water from radiating through the piping during stand-by periods. A separate 3/4" Female NPT tapping is to be provided for relief valve installation. An ASME/AGA rated automatic reseating combination temperature and pressure safety relief valve set at 150 psi and 210°F shall be factory supplied.

ELECTRICAL

The heating elements shall be high quality copper sheath electric immersion type. The water heater shall be a dual element design consisting of an upper and lower element rated at _______________ Watts each (Note: 6, 10, & 19 gallon models have single lower element only). Dual element water heaters are interlock wired for non-simultaneous element operation (☐ Optional Specification: elements to be wired for simultaneous operation). The heater shall be designed to operate at _______________ volts, single phase (☐ Optional Specification: three phase unbalanced open delta), __________ Hz with all necessary operating controls factory mounted, wired and tested. Water temperature shall be controlled through adjustable 110-170°F snap action surface thermostats (☐ Optional Specification: immersion thermostat 100-180°F or 30-110°F). An over-temperature manual reset Hi-Limit shall be factory installed to disconnect all conductors to the heating element(s) in the event of an over-temperature condition in the pressure vessel.

In addition, the water heater shall be supplied with the following optional features:

☐ Option

☐ Option

☐ Option

Hubbell shall warranty all electrical components against defects in workmanship and material for a period of one (1) year from date of start-up, and the pressure vessel for a full five (5) years Non Pro-Rated (☐ Optional Specification: full ten (10) years Non Pro-Rated) from date of start-up, provided that the unit is started within three (3) months of date of shipment and installed and operated within the scope of the tank design and operating capability. Each water heater shall be shipped with a complete set of installation and operating instructions including spare parts list and approved drawings.