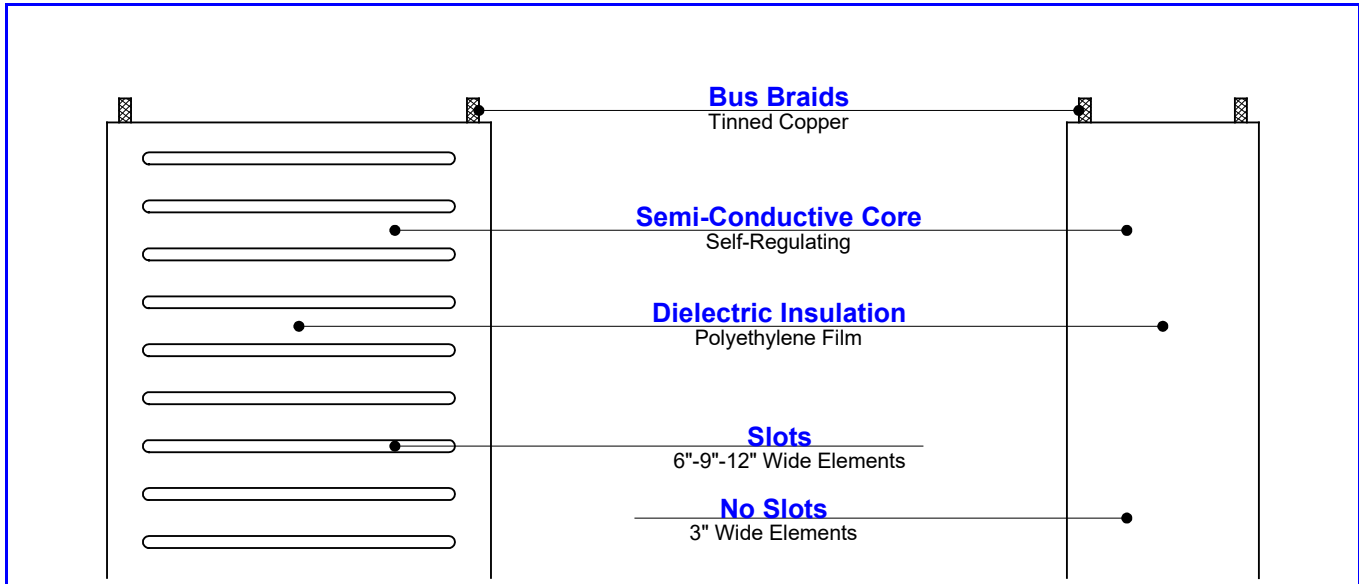


Construction...



The STEP® Heating Element is constructed of two parallel bus braids embedded in a semi-conductive polymeric material.

A polymeric dielectric film is applied at the time the element

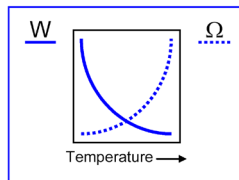
Description...

The STEP® Heating Element is a patented, self-regulating, thin and flat, strong and flexible, sheet heater that provides even heat with no hot spots. It is ideal for a wide range of applications that includes radiant floor heating (STEP Warmfloor®) and a limitless number of OEM applications found in the marine, transportation, medical, veterinary, horticulture, sports, military and consumer product markets.

Being self-regulating, the element will vary the heat it generates relative to the surrounding temperature. The colder the temperature the higher the heat-output and inversely, the warmer

is manufactured so that the film is thermally fused to the heating element. This creates a heating product that features a solid and homogeneous, construction that will not separate from thermal cycling or physical flexing.

the temperature the lower the heat-output. This self-regulating characteristic allows the STEP® Heating Element to provide even, gentle heating with no burnout as



typical of constant wattage heating elements. In addition, this even heat-output allows the STEP® Heating Element to be safely used in conjunction with a wide range of low-temperature materials such as man-made fabrics, vinyl, rubber and wood.

Slots are fabricated into the 6" and wider STEP® Heating Element to increase flexibility.

The STEP® Heating Element has the added safety benefit of being a low voltage device. The heaters can operate using a 5V to 30V AC or DC source. The heaters can even operate from a battery pack or a solar or wind power source.

The STEP® Heating Element can easily be incorporated into your OEM application as there are numerous widths and wattage outputs to choose from. The heaters are field cut to length to suit the application and they can be powered from efficient low voltage power sources.

Product Specifications...

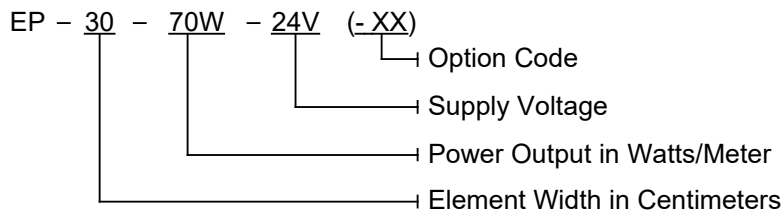
Heating element type	Positive Temperature Coefficient (PTC) semi-conductive polymer
Dimensions	Widths available: 3" (7 cm), 6" (15 cm), 9" (23 cm) and 12" (30 cm) Thickness: 3/64" (1.2 mm) Length: cut to order with a 174 Ft (53 m) maximum shipping spool length Weight: 3" Width – 0.08lb/ft (0.12kg/m) 6" Width – 0.12lb/ft (0.18kg/m) 9" Width – 0.18lb/ft (0.27kg/m) 12" Width – 0.23lb/ft (0.34kg/m)
Output wattage	1.0 W/ft (3 W/m) through 24 W/ft. (80 W/m) @ 68°F (20°C)
Supply voltages	5V to 30V, AC or DC source
Bus braid	15 AWG tinned copper flat braid
Dielectric jacket	PE film, thermally bonded to heating element
Minimum bending radius	3/32" (2.5mm) @ 32°F (0°C)
Maximum exposure temperature	176°F (80°C)
Chemical Compatibility	Element MEP is resistant to water and most chemicals.

NOTE: With new products and chemicals entering the market, it is very important to test the compatibility of the materials used in direct contact with the STEP® Heating Element.

Approvals / Certifications...

Electro Plastics, Inc. has various approvals and certifications for the finished products it manufacturers such as STEP Warmfloor® and STEP® Marine brand of heating systems. It is the responsibility of the OEM to secure the necessary finished product approvals that are market appropriate and industry required for the finished product they are manufacturing using the STEP® Heating Element.

Model Number Matrix...



Product Options...

Option Code	Description
NS	No Slots, slots only applicable to the 6" - 9" – 12" wide STEP® Heating Element
MEP	Electrically insulated and chemically inert

Product Performance...

STEP® Heating Element Power Output in Watts per Foot at the Stated Supply Voltage

STEP® Element Model No.	Heater Width	Ohm/Ft @ 68°F (20°C)	W/ft² @ 68°F (20°C)	Power Output (W/ft) ⁽¹⁾				
				32°F (0°C)	50°F (10°C)	68°F (20°C)	86°F (30°C)	104°F (40°C)
12V STEP® Heating Element ⁽²⁾								
MEP-7-20W-12V*	3"	24	24.4	7.5	6.7	6.1	5.4	4.6
MEP-7-40W-12V*	3"	12	48.0	13.7	13.0	12.0	10.0	9.0
MEP-15-32W-12V*	6"	14	20.6	12.2	11.6	10.3	9.2	7.8
24V STEP® Heating Element ⁽²⁾								
MEP-7-33W-24V	3"	58	40.0	10.8	10.2	9.1	7.9	6.8
MEP-15-33W-24V	6"	58	20.0	10.8	10.2	10	7.9	6.8
MEP-23-22W-24V	9"	85	9.0	8.0	7.4	6.8	5.8	5.0
MEP-23-36W-24V	9"	52	14.6	13.0	12.3	11.0	9.6	8.3
MEP-23-80W-24V	9"	24	32.0	27.0	26.8	24.0	20.8	17.8
EP-30-25W-24V	12"	74	7.8	9.4	8.8	7.8	6.6	5.7
EP-30-29W-24V	12"	64	9.0	10.7	10.0	9.0	7.8	6.8
MEP-30-36W-24V	12"	52	11.0	13.0	12.3	11.0	9.6	8.3
MEP-30-70W-24V	12"	27	21.3	24.0	22.5	21.3	18.5	15.7

Notes:

1. To determine a power output in Watts per Meter, multiply the Watts per Foot power output by 3.28.
2. Power outputs listed above are based upon the stated supply voltages. The use of other supply voltages will provide a variation in the power output. Consult the factory for your application specific values.
3. Power outputs at temperatures other than those listed above can be estimated by extrapolating between the listed values. Consult the factory for temperatures that are higher or lower than listed above.

Product Availability:

Electro Plastics, Inc. maintains an inventory only of selected heating elements. Available quantities of those standard inventoried elements will vary with production schedules and receipt of orders. Elements marked with (*) may not be inventoried and will be manufactured only upon demand. A minimum 5,000 ft. (1,500 m) order is required for production of those elements.



11147 Dorsett Road
Maryland Heights, MO 63043, USA
Tel.: 1-314-222-9090
E-mail: info@electroplastics.com

Electro Plastics, Inc. makes no representations or warranties, either expressed or implied, with respect to the contents of this publication or the products that it describes, and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. Electro Plastics, Inc. reserves the right to revise this publication, and to make changes and improvements to the products described in the publication, without the obligation of Electro Plastics, Inc. to notify any person or organization of such revisions, changes or improvements.