



## Silicon Carbide Heating Elements

This type of heating element is widely used in many high temperature electric furnaces, as well as in other electric heating devices. The new range of IPS heating elements are manufactured from recrystallised high-purity alpha silicon carbide (SiC), which is a superb performer in high temperature applications. It is characterised by anti-oxidisation, anti-corrosion, long service life, minimal deformation, with easy installation and maintenance.

SiC heating elements can be installed either vertically or horizontally. They can work in temperatures up to 1600°C/2910°F and the elements will not deform. This characteristic lends itself particularly to flexible furnace design. Another feature is that elements can be replaced when the furnace is working, avoiding shutdown.



The element hot zone and cold ends are connected by a specialised welding process. The welded section is treated with a second siliconised application at high temperatures to substantially improve the strength of the weld and ensure a high quality heating product. The resistivity of the hot zone is much higher than the cold zone, therefore reducing heat loss from this area, improving energy efficiency and reducing connection problems.

IPS elements are used in a wide range of applications:

- Powder metallurgy
- Heat treatment
- Semiconductors & Magnetic materials
- Glass & Ceramics
- Analytical laboratory & Scientific research
- Ceramic fibre manufacturing

A range of element sizes and designs are available. For more information contact us at:

[enq@ipsceramics.com](mailto:enq@ipsceramics.com).

In order to reduce the rate of element ageing (gradual oxidation and resistance factors), a special technology is employed to coat a protective film on the surface of the hot zone on each element.



<b>Typical Properties</b>	
Bulk Density	2.5g/cm <sup>3</sup>
Porosity	23%
Thermal conductivity	14-19W/m°C (1000°C)
Rupture strength	50MPa (25°C)
Specific heat	1.0KJ/kg°C (25-1300°C)
Coefficient of Thermal expansion	4.5x10 <sup>-6</sup> (1000°C)