

SiC Heater



Heating Element:

1. SW (Standard)

SW Silicon Carbides are used in applications ranging in temperature from 600°C up to 1500°C in both air and controlled atmospheres.

Although the type of atmosphere used will determine the maximum recommended element temperature. This kind of silicon carbide elements can be mounted either

vertically or horizontally. The elements of our product are available in the range of 10 to 54mm diameter. The total length can vary up to 4500mm.

Diameter	Length of Hot zone	Length of Cold End	Overall Length	Resistance	Diameter	Length of Hot zone	Length of ColdEnd	Overall Length	Resistance
8	100-300	60-200	240-700	2.1-8.6	30	300-2000	250-800	800-3600	0.4-4.0
12	100-400	100-350	300-1100	0.8-5.8	35	400-2000	250-800	900-3600	0.5-3.6
14	100-500	150-350	400-1200	0.7-5.6	40	500-2700	250-800	1000-4300	0.5-3.4
16	200-600	200-350	600-1300	0.7-4.4	45	500-3000	250-750	1000-4500	0.3-3.0
18	200-800	200-400	600-1600	0.7-5.8	50	600-2500	300-750	1200-4000	0.3-2.5
20	200-800	250-600	700-2600	0.6-6.0	54	600-2500	300-750	1200-4000	0.3-3.0
25	200-1200	250-700	700-2600	0.4-5.0					

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2. U-TYPE

U shape Silicon Carbide is consists of two silicon carbide rod with same diameter. Each rod has both hot zone and cold end with identical resistance. Two rods are connected by the low resistance SiC. Also the connector could be used as holder according to different requirements.

Diameter	Length of Hot zone	Length of Cold End	Centre distance	Diameter of Centre	Length of Connector
14	400	300	30	22	55
16	400	300	35	25	60
20	500	400	40	30	70
25	700	450	55	38	90
30	1500	650	65	45	110
35	1500	650	90	45	120
40	2400	850	110	56	150



3. W-TYPE

3-phase elements are available in 2 different types: SGC (Dumbbell), SGD(Standard).

These elements are self-bonded silicon carbide formed by re-crystallization of silicon carbide at high temperature. It consists of three high-purity silicon carbide rods connected at one end by a silicon carbide crossbar. The joints, also formed from silicon carbide, fully bond the

components into a structurally homogeneous body. SGC elements are designed for vertical installation in standard float glass bathes and SGD elements for horizontal installation. They can be connected directly on three-phase power supply and is a one-side terminal type which permits drawing out the terminals from the roof of the furnace. All elements can be delivered with a wide range of accessories for trouble-free and energy-saving operation.

Diameter	Length of Hot zone	Length of Cold End	Centre distance	Diameter of Centre	Length of connector
14	400	300	30	22	90
16	400	300	35	25	95
20	500	400	40	30	120
25	700	450	55	38	140
30	1500	650	65	45	170
35	1500	650	90	45	190
40	2400	850	110	56	230

4. ST-TYPE

SiC heating elements have an exceptional service life and have an excellent performance in a wide range of application with corrosive atmosphere, particular in the glass industry. Various kinds of coatings are available upon request in order to improve the durability of the elements even under the harshest furnace conditions.

Diameter	Length of Hot zone	Length of Cold End	Length of low resistance
25	400	350	300
30	400	350	300
35	500	350	300
40	500	350	300

5. Single Spiral Silicon Carbide and Double Spiral Silicon Carbide:

Features:

- 1) It is made from silicon Carbide powder
- 2) Its name is single or double spirial silicon carbide heating element
- 3) It is widely used in all kinds of kilns and furnaces.

Outside Diameter	Inside Diameter	Length of Hot zone	Length of Cold End(max)	Length of Cold End(minimum)
30	18	300	250	250
35	23	300	300	300
40	26	300	300	300
40	30	400	400	40
50	40	500	450	40
60	50	700	160	40
70	60	700	160	40
80	70	800	160	40
90	80	800	160	40

6 . Notes of Installation:

- 1) Hot Rod should be protected against damp during storing and setting so as to improve the durability and performance of the rod.
- 2) In order to be sure of well-distributed furnace temperature and Rod loading ,groups should be divided before installation. The tolerance of resistance of each group can not exceed 10%.
- 3) Because rod is hard and brittle, please be careful when installing and maintaining so as to avoid damage.
- 4) When operating the electric furnace at the beginning , thevoltage should be increased slowly and can not be fully loaded one time. Otherwise the larger current will damage the Rod.
- 5) When individual rod is damaged and needs to be changed,a new one should be used according to the increasing resistance . if many are damaged or resistance increased too much, all the rods should be changed.

7. The influence of Operating Temperature and Surface Load on the Rod surface in a different

atmosphere	Furnace Temperature (°C)	Surface Load (W/cm ²)	The influence on the Rod
Ammonia	1290	3.8	The action on SiC produces methane and destroys the protection film of SiO ₂
Carbon dioxide	1450	3.1	Corrode SiC
Carbon monoxide	1370	3.8	Absorb carbon powder and influence the protection film of SiO ₂
Halogen	704	3.8	Corrode SiC and destroy the protection film of SiO ₂
Hydrogen	1290	3.1	The action on SiC produces methane and destroys the protection film of SiO ₂
Nitrogen	1370	3.1	The action on SiC produces insulating layer of silicon nitride
Sodium	1310	3.8	Corrode SiC
silicon dioxide	1310	3.8	Corrode SiC
Oxygen	1310	3.8	SiC oxidized
Water-vapor	1090-1370	3.1-3.6	The action on SiC produces hydrate of silicon
Hydrocarbon	1370	3.1	Absorb carbon powder resulted in Hot pollution