PMEXO

EDITION OCTOBER 2026

SiC & MoSi2 heating elements

Technical reference: element types, dimensions, reference data, installation and accessories

The elements are made in Dengfeng, China. Send me the part number or a photo with dimensions and I'll check it.

All data are for identification and reference only. Every size is confirmed with you in writing before a quotation.

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Photos: elements and packing. Drawings are schematic and not to scale.

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How to use this catalogue

A working reference for people who keep furnaces running: maintenance engineers, furnace builders, service companies and distributors. It helps you identify an element, find its size and data, and send a request that can be checked in one go.

THREE STEPS

1

Identify the material and shape: SiC or MoSi2, rod, U, W, spiral ...

2

Measure the old element and find the nearest line in the dimension tables.

3

Send the request sheet (page 05) with photos. I check it and reply.

How the catalogue is organised

Each part follows the same order: types → material properties → electrical behaviour and atmospheres → surface load → installation and accessories → design data → dimension tables. Dental furnace elements are in a separate part at the end.

Where the data come from

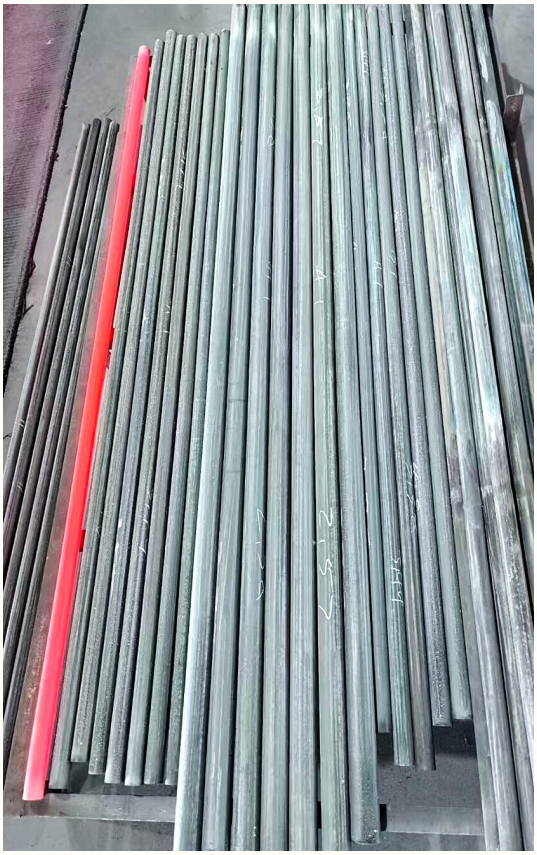
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Where a published value does not match its neighbours or its formula, it is kept as published and marked †. Please confirm such values before use.

Units and conventions

Lengths in mm · resistance in Ω · power in W or kW · surface load in W/cm² · temperatures in °C. Drawings are schematic and not to scale. Photos show real elements and packing.

All data are for identification and reference only. Every size is confirmed with you in writing before a quotation.



Photos: elements and packing. Drawings are schematic and not to scale.

06 SiC heating elements

24 MoSi2 heating elements

34 Dental furnace elements

36 Glossary

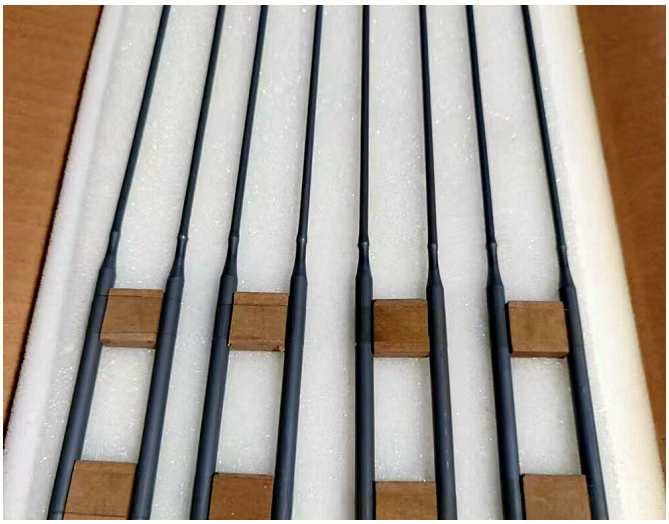
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SiC or MoSi2? At a glance

A short comparison taken from the data in this catalogue. The page column shows where each point is explained.



SiC



MoSi2

Point	SiC	MoSi2	Page SiC / MoSi2
Temperature	Furnace temperatures up to about 1600 °C, depending on type, atmosphere and load	Applicable range 800–1850 °C; up to 1900 °C element temperature in an oxidising atmosphere (1900 grade)	15 / 24
Protective layer	SiO_2 film forms on the hot zone between 1000 and 1300 °C	Dense quartz (SiO_2) film forms in a high-temperature oxidising atmosphere	09 / 27
Resistance in service	Rises slowly with long-term use (ageing); allow for it in the power supply	Rises rapidly with temperature; normally stable over time, so old and new elements can be used together	09 / 28
Typical fields	Magnetic materials, powder metallurgy, ceramics, glass, metallurgy, machinery	High-temperature furnaces for ceramics, magnetic materials, glass, metallurgy, refractories; dental sintering furnaces	06 / 24
Shapes	ED, DB, U, W, SC, SCR, H, UX	I, U, W, L and special shapes	07 / 25
How a size is written	OD × HZ × CZ × OL + resistance (Ω)	d/c × Le × Lu × a + grade	16 / 26
Watch out for	Alkalis attack SiC at about 1300 °C; molten cobalt, nickel and chromium attack the element	Not for long-term use at 400–700 °C (low-temperature “pest” oxidation); above 1700 °C the SiO_2 layer melts	09 / 27

Not sure which one you have? Look at the shape and the terminals, then compare with the type pages. Or send a photo next to a ruler.

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Request sheet · what to send

Fill in what you know and send it with photos. Complete data let me check the element in one pass instead of several rounds of questions.

For every request

- ☐ Furnace brand, model and serial number (type plate)
- ☐ Elements per furnace and quantity needed
- ☐ Photos: whole element next to a ruler, terminals, label
- ☐ Part number on the element or in the furnace manual
- ☐ Atmosphere and maximum furnace temperature
- ☐ Delivery country (for a freight check)

SiC element

	Your value
Type (ED, DB, U …)	
OD	
HZ	
CZ	
OL	
A (U, W)	
R (Ω)	

MoSi2 element

	Your value
Type (I, U, W, L)	
d / c	
Le	
Lu	
a	
Grade	
R (Ω)	

Measure with a caliper, not a tape. Elements that look the same can differ in diameter, zone lengths, shank spacing or resistance.

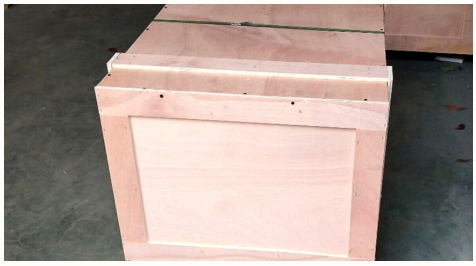
What happens next

01 You send the sheet and photos.

02 I compare them with the tables and write back the matching size, or which data are still missing.

03 You receive a written quotation, FOB or EXW.

04 Nothing proceeds until you confirm in writing.



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Notes · furnace details



GENERAL DESCRIPTION

SiC heating elements

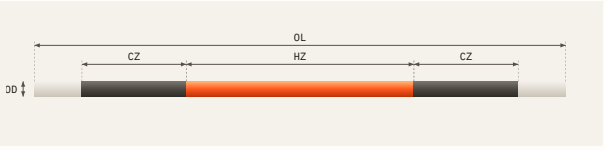
Silicon carbide (SiC) elements are non-metallic resistance heaters for electric furnaces. Green silicon carbide is formed into blanks, siliconised at high temperature and recrystallised. Shapes covered here: rods (ED, DB), multi-leg elements (U, W, H, UX) and spiral tubes (SC, SCR). Typical fields: magnetic materials, powder metallurgy, ceramics, glass, metallurgy and machinery.

What a replacement must match: diameter, hot zone, cold zone, overall length and resistance. The cold ends have a lower resistance than the hot zone, so the terminals stay cooler where they pass through the wall. Service behaviour depends on furnace design, atmosphere, temperature and surface load.

SIC HEATING ELEMENTS

SiC element types

ED (rod) type

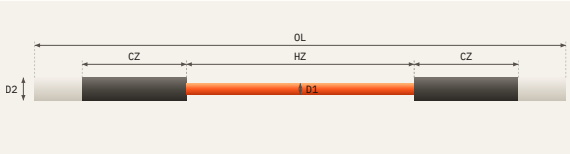


- **OD** Outer diameter, mm
- **HZ** Hot zone length, mm
- **CZ** Cold zone length, mm
- **OL** Overall length, mm

Example: OD=54mm, HZ=1575mm, CZ=419mm, OL=2413mm, Resistance 0.9Ω

Specify as: ED,54/1575/2413/0.9Ω

DB (dumbbell) type

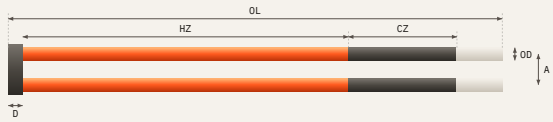


- **D1/D2** Diameter, mm
- **HZ** Hot zone length, mm
- **CZ** Cold zone length, mm
- **OL** Overall length, mm

Example: D1/D2=18/28mm, HZ=300mm, CZ=350mm, OL=1000mm, Resistance 1.7Ω

Specify as: DB,18/28/300/350/1.7Ω

U type

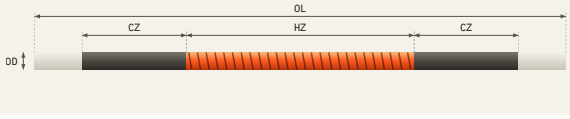


- **OD** Outer diameter, mm
- **HZ** Hot zone length, mm
- **CZ** Cold zone length, mm
- **OL** Overall length, mm
- **A** Shank spacing, mm
- **D** Bridge, mm

Example: OD=20mm, HZ=300mm, CZ=400mm, OL=700mm, A=60mm, Resistance 2.24Ω

Specify as: U,20/300/400/60/2.24Ω

SC (single spiral) type



- **OD** Outer diameter, mm
- **HZ** Hot zone length, mm
- **CZ** Cold zone length, mm
- **OL** Overall length, mm

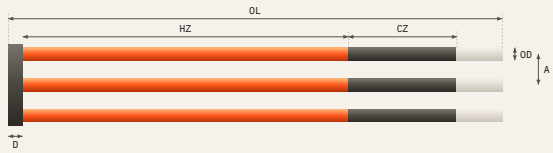
Example: OD=25mm, HZ=300mm, CZ=200mm, OL=700mm, Resistance 1.598Ω

Specify as: SC,25/300/700/1.598Ω

SIC HEATING ELEMENTS

SiC element types

W W (three-phase) type

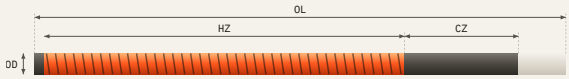


- **OD** Outer diameter, mm
- **HZ** Hot zone length, mm
- **CZ** Cold zone length, mm
- **OL** Overall length, mm
- **A** Shank spacing, mm
- **D** Bridge, mm

Example: OD=20mm, HZ=250mm, CZ=350mm, OL=625mm, A=52mm, Resistance 0.9Ω

Specify as: W,20/250/350/52/0.9Ω

SCR SCR (double spiral) type

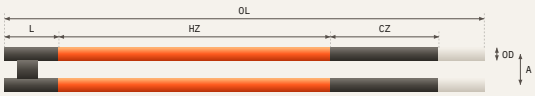


- **OD** Outer diameter, mm
- **HZ** Hot zone length, mm
- **CZ** Cold zone length, mm
- **OL** Overall length, mm

Example: OD=31.7mm, HZ=305mm, CZ=241mm, OL=546mm, Resistance 4.46Ω

Specify as: SCR,31.7/305/546/4.46Ω

H H type



- **OD** Outer diameter, mm
- **HZ** Hot zone length, mm
- **CZ** Cold zone length, mm
- **A** Shank spacing, mm
- **OL** Overall length, mm

Example: OD=20mm, HZ=250mm, CZ=350mm, OL=625mm, A=52mm, Resistance 0.9Ω

Specify as: H,20/250/350/52/0.9Ω

UX UX (slot) type



- **OD** Outer diameter, mm
- **HZ** Hot zone length, mm
- **CZ** Cold zone length, mm
- **OL** Overall length, mm

Example: OD=30mm, HZ=400mm, CZ=300mm, OL=700mm, Resistance 2.76Ω

Specify as: UX,30/400/700/2.76Ω

SIC HEATING ELEMENTS

Physical properties of SiC heating elements

Specific gravity	2.6-2.8 g/cm³	**Bend strength**	>300 Kg
Hardness	>9 MOH'S	**Tensile strength**	>150 Kg/cm³ †
Porosity	<30%	**Radiancy**	0.85

The linear expansion coefficient, heat conductivity and specific heat of SiC heating elements change with temperature. The published values are:

Temperature (°C)	Linear expansion coefficient (10^{-6} m/°C)	Heat conductivity (kcal/m·h·°C)	Specific heat (cal/g·°C)
0	/	1	0.148
300	3.8	/	/
400	/	/	0.255
600	4.3	14-18	/
800	/	/	0.294
900	4.5	/	/
1100	/	12-16	/
1200	4.8	/	0.325
1300	/	10-14	/
1500	5.2	/	/

Chemical properties of SiC heating elements

1. Oxidation resistance

In air the element begins to oxidise at 800 °C. Between 1000 and 1300 °C a protective SiO_2 film forms on the surface of the hot zone; at 1300 °C cristobalite crystallises out. At 1500 °C the film reaches a thickness at which oxidation becomes extremely slow and stabilises. Above 1627 °C the film is damaged, oxidation accelerates markedly and the element fails prematurely.

Oxidation is very slow in service, but long-term operation still increases the resistance of the element. This is called ageing. The rate depends on temperature, atmosphere and surface load.

2. Effect of alkalis and alkaline metal oxides

Alkalis and alkaline metal oxides react with SiC at about 1300 °C to form silicates (alkali corrosion). This markedly affects how red the element glows and how much heat it produces.

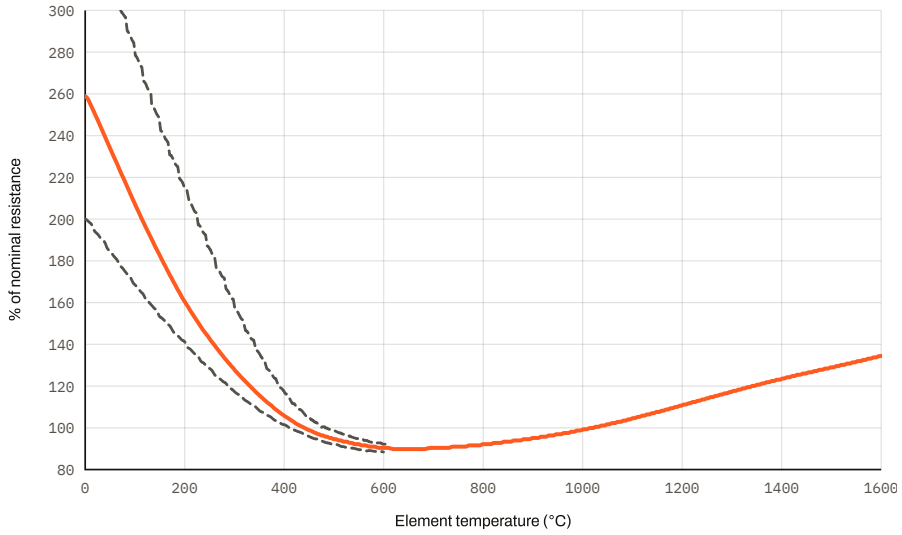
3. Effect of molten metals

Some metals, such as cobalt, nickel and chromium, attack the element when molten at high temperature.

† Value as published in the source table. It does not match the neighbouring rows or the formula. Confirm before use.

SIC HEATING ELEMENTS

Electrical properties of the elements



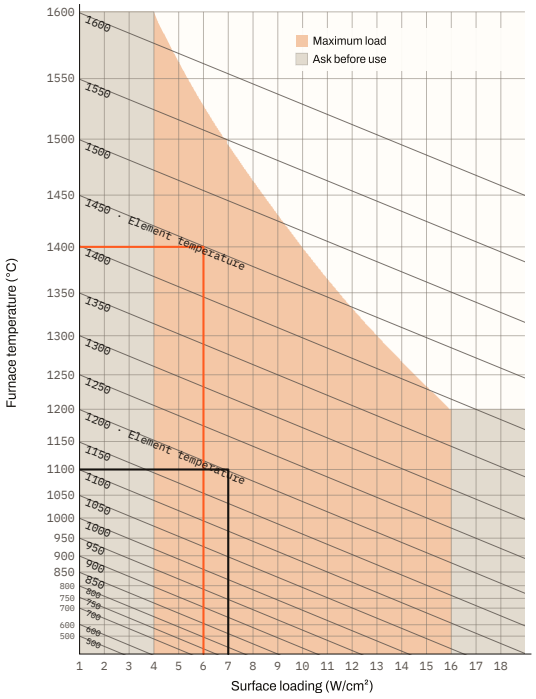
Resistivity / temperature characteristic curve: % of nominal resistance vs. element temperature. Redrawn from the published reference chart; curves and values as published.

Operating temperature and surface load of SiC elements in different atmospheres

Atmosphere	Furnace temp. (°C)	Surface load (W/cm²)	Effect on the element	Solution
Ammonia	1290	3.8	Reacts with SiC to form methane, reducing the SiO_2 protective film	Dew-point activation
Carbon dioxide CO_2	1450	3.1	Erodes SiC	Protect with a quartz tube
Carbon monoxide 18% CO	1500	4.0	No effect	/
Carbon monoxide 20% CO	1370	3.8	Adsorbed carbon particles affect the SiO_2 protective film	/
Halogen	704	3.8	Erodes SiC and reduces the SiO_2 protective film	Protect with a quartz tube
Hydrocarbon	1310	3.1	Adsorbed carbon particles cause thermal contamination; deposited carbon from decomposition can easily cause electrical faults	Supply sufficient air
Hydrogen	1290	3.1	Reacts with SiC to form methane, reducing the SiO_2 protective film	Dew-point activation
Methane	1370	3.1	Adsorbed carbon particles cause thermal contamination	/
Nitrogen	1370	3.1	Reacts with SiC to form an insulating silicon nitride layer	B coating
Sodium Na	1310	3.8	Erodes SiC	Protect with a quartz tube
Sulphur dioxide SO_2	1310	3.8	Erodes SiC	Protect with a quartz tube
Vacuum	1204	3.8	/	/
Oxygen	1310	3.8	SiC is oxidised	/
Water (different contents)	1090~1370	3.1~3.6	Reacts with SiC to form silicon hydrate	A coating

SIC HEATING ELEMENTS

Surface load



Recommended element loadings in air. Redrawn from the published reference chart; curves and values as published.

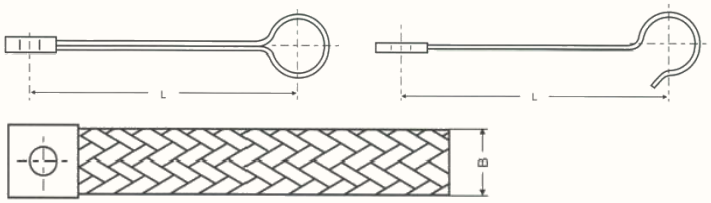
The surface load of an element must be chosen correctly for the furnace construction, atmosphere and temperature. The chart below shows the relation between furnace temperature, element temperature and element surface load when the element's radiation is not obstructed.

Recommended surface load

Furnace temp. (°C)	Surface load of hot zone (W/cm²)
1100	<17
1200	<13
1300	<9
1350	<7
1400	<5
1450	<4

Accessories for SiC heating elements

The standard accessories for SiC elements are aluminium braided connecting straps and clamps. Clamps come in H, G and C types.



SIC HEATING ELEMENTS

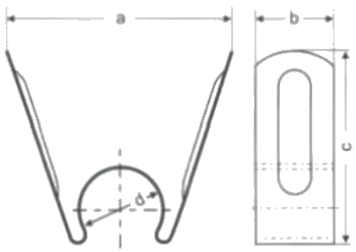
Accessories for SiC heating elements

Connecting straps

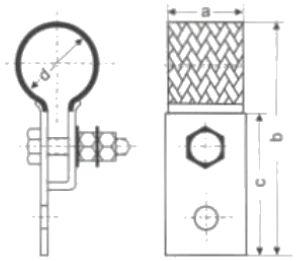
Element diameter (mm)	Strap width B (mm)	Working length L (mm)	Wiring hole diameter (mm)	Max. current (A)
8.0 · 10.0 · 12.0 · 14.0	15	150	7	25
16.0	15	140	7	50
18.0 · 20.0	20	130	7	60
25.0	25	160	11	70
30.0 · 31.7 · 35.0	30	160	11	180
38.1 · 40.0 · 44.4 · 54.0	30	140	11	240

Clamps

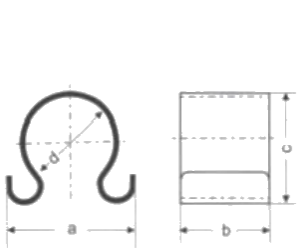
Element diameter (mm)	H type clamp			G type clamp			C type clamp		
	a	b	c	a	b	c	a	b	c
12.0	–	12	31	–	–	–	–	–	–
14.0	–	14	35	–	–	–	–	–	–
16.0	–	16	40	–	–	–	–	–	–
20.0	–	20	45	20	60	40	–	–	–
25.0	–	25	53	20	65	40	–	–	–
30.0	–	30	58	30	83	53	–	30	–
31.7	–	30	58	30	85	53	–	30	–
35.0	–	35	65	30	88	53	–	35	–
38.1	–	40	78	30	91	53	–	40	–
40.0	–	40	78	–	–	–	–	40	–
44.4	–	40	75	–	–	–	–	40	–
54.0	–	40	70	–	–	–	–	40	–



H type clamp



G type clamp



C type clamp

SIC HEATING ELEMENTS

Installation and operation of the elements

01 To keep furnace temperature and load even across the elements, match the resistance of the elements before installation. The resistance difference between element groups should be kept within ±5%.

02 SiC elements are very brittle. Handle them carefully during installation and maintenance to avoid damage.

03 When starting the furnace, raise the voltage slowly and gradually. Never apply full load at once, otherwise the excessive inrush current will damage the element.

04 Operation requires an adjustable transformer or SCR voltage regulator, a voltmeter, an ammeter and an automatic temperature controller. Because the resistance rises gradually through oxidation, raise the voltage during operation to hold the normal furnace temperature. When the transformer reaches its upper limit and the requirement is still not met, stop the furnace, change the wiring connection and continue.

05 If an individual element fails during long-term operation and must be replaced, choose one with a suitable resistance based on how far the resistance of the others has increased; never install a new element at random. If many elements are damaged, or the resistance has risen so much that the furnace temperature cannot be reached, it is better to replace all elements. Measure and mark the resistance of the removed elements (with voltmeter and ammeter), match them and use them in a low-temperature zone.

06 A new furnace, or one that has not been used for a long time, must be dried before use. For drying it is better to use old elements or another heat source.

07 If moisture is released while firing parts or materials, the furnace should have vents to discharge moisture and other harmful gases, to protect the elements.



Photos: elements and packing. Drawings are schematic and not to scale.

SIC HEATING ELEMENTS

Furnace design data · batch (intermittent) furnaces

01 Heating power (kW) = weight of the load (kg) × specific heat of the load × heating rate (max. furnace temp. (°C) ÷ total heating time (h)) ÷ 860 (860 kcal = 1 kW).

02 Assume a unit heat loss of 740 kcal/m²·h. Heat loss (kW) = surface area of furnace chamber (m²) × 740 ÷ 860 (860 kcal = 1 kW).

03 Assume a furnace wall thickness of 10 cm and a furnace temperature of 100 °C as one unit constant; the heat stored per m² of chamber is then 635 kcal. Heat storage power (kW) = {[(wall thickness cm ÷ 10 cm) × (max. furnace temp. °C ÷ 100 °C)] × 635} × chamber area m² ÷ (total heating time h × 860).

04 The total power needed (kW) is the sum of the three terms above. In long-term high-temperature operation SiC elements age, their resistance increases and their power decreases. To be able to adjust to the required power, the transformer should be 60–100% larger than the total power needed.

05 Select the element dimensions according to the furnace size.

06 After fixing the maximum furnace temperature, the power (kW) of a single element = specified surface load of the element at that temperature × hot zone surface area of the selected element (from the dimension tables).

07 Total power needed (kW) ÷ power of a single element = number of elements to be installed.

08 Design the wiring diagram and determine the resistance of a single element.

09 Distance between the element, the furnace wall and the load.

Element dia. (mm)	8	12	14	16	20	25	30
Minimum distance (mm)	25	38	44	57	68	79	94

10 The hole in the furnace wall for inserting the element should be 1.5 times the element diameter. Fill the gap with asbestos cord or aluminium silicate fibre felt.

11 The centre distance between two element holes should be 3–5 times the element diameter.

12 For good contact between element and clamp, wrap 2–3 layers of pure aluminium foil around the aluminium-sprayed end of the element before mounting the clamp.

13 To save energy, build the furnace insulation from lightweight alumina bricks with good insulating performance and a suitable amount of aluminium silicate fibre bricks.

SIC HEATING ELEMENTS

Furnace design data · continuous furnaces (practice values)

01 Material on a furnace car: transformer power 230 kW/m³ (chamber volume), max. production power 193 kW/m³ (chamber volume). Material on pusher plates: transformer power 194 kW/m³ (chamber volume), max. production power 160 kW/m³ (chamber volume).

02 Per m³ of furnace chamber volume, a hot-zone surface area of 19620.7 cm² of elements can be installed.

03 Number of elements to install = 19620.7 cm² ÷ hot-zone surface area of the selected element (cm²).

04 For other data, refer to the intermittent furnace.

Characteristics and applications of SiC heating elements

CHARACTERISTICS

- Fast heating
- Oxidation resistance
- Corrosion resistance
- High-temperature use
- Chemical stability
- Low deformation at high temperature

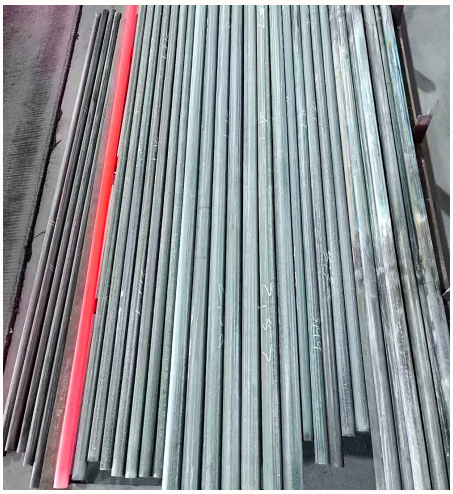
USES

Heating elements for tunnel kilns, glass kilns, vacuum furnaces, muffle furnaces, smelting furnaces and all kinds of heating equipment.

APPLICATION AREAS

- Glass industry
- Automotive parts
- Ceramics industry
- Analytical testing
- Magnetic materials
- Scientific research
- Electronics industry
- Metallurgy industry
- Semiconductor industry
- Lithium battery materials

SiC elements come in several types and grades for different operating conditions, for furnace temperatures up to about 1600 °C depending on type, atmosphere and load. Typical uses include glass, ceramics, metals and electronics.



DIMENSIONS OF SIC HEATING ELEMENTS

1. ED (rod) type

Dia. (mm)	Hot zone (mm)	Cold zone (mm)	Overall length (mm)	Hot zone surface area (cm²)	Rated load (tested at 1050 °C)		
					Voltage (V)	Power (W)	Resistance (Ω)
12	150	150	450	56	41	896	1.85
	200	200	600	75	50	1200	2.10
	250	200	650	94	63	1504	2.62
	300	200	700	113	75	1808	3.15
14	200	200	600	88	41	1408	1.22
	250	250	750	110	51	1760	1.50
	300	250	800	132	62	2112	1.80
	350	200	750	154	73	2464	2.14
	400	250	900	176	82	2816	2.40
16(5/8")	300	250	800	150	62	2400	1.60
	350	350	1050	176	70	2816	1.75
	400	350	1100	200	80	3200	2.00
	450	250	950	225	90	3600	2.25
	500	250	1000	250	100	4000	2.50
	600	250	1100	300	120	4800	3.00
20(3/4")	300	400	1100	188	59	3008	1.14
	400	350	1100	251	76	4016	1.45
	500	400	1300	314	97	5056	1.85
	600	400	1400	376	114	6016	2.15
	700	400	1500	439	138	7024	2.70
	800	300	1400	502	148	7530	2.90
	900	300	1500	565	162	8475	3.10
25(1")	300	300	900	236	53	3776	0.75
	400	450	1300	314	71	5024	1.00
	500	400	1300	392	90	6272	1.30
	600	400	1400	470	108	7520	1.55
	700	400	1500	550	120	8250	1.75
	800	400	1600	627	134	9450	1.90
	900	300	1500	705	151	10575	2.16
	1000	300	1600	785	168	11775	2.40
30	400	300	1000	380	63	5700	0.70
	500	300	1100	470	80	7050	0.90
	600	400	1400	570	92	8550	1.00
	700	450	1600	660	109	9900	1.20
	800	500	1800	750	125	11250	1.40
	900	400	1700	850	140	12750	1.53

Note: 1. Resistance tolerance: ±20% (published reference value). 2. For other sizes, send a drawing or the old element's dimensions for a check.

DIMENSIONS OF SIC HEATING ELEMENTS

1. ED (rod) type

Dia. (mm)	Hot zone (mm)	Cold zone (mm)	Overall length (mm)	Hot zone surface area (cm²)	Rated load (tested at 1050 °C)		
					Voltage (V)	Power (W)	Resistance (Ω)
30	1000	300	1600	940	153	14100	1.65
	1100	300	1700	1035	168	15525	1.82
31.7(1.25")	356	280	916	355	52	5315	0.50
	406	280	965	405	59	6060	0.57
	457	280	1016	456	66	6820	0.64
	508	280	1067	507	73	7585	0.71
	559	280	1118	557	80	8345	0.78
	610	280	1168	608	88	9110	0.85
	660	280	1219	659	95	9855	0.92
	711	280	1270	709	103	10615	0.99
	762	280	1321	760	110	11380	1.06
	813	394	1600	811	117	12140	1.13
	864	394	1651	861	124	12900	1.20
	914	394	1702	912	131	13650	1.27
	1016	394	1803	1013	145	15170	1.40
	1067	394	1854	1063	153	15930	1.47
	1118	394	1905	1115	160	16690	1.54
	1448	406	2260	1442	217	21620	2.17
	1499	381	2260	1493	224	22380	2.25
35	400	400	1200	440	67	6600	0.68
	500	400	1300	550	84	8250	0.85
	600	400	1400	660	100	9900	1.02
	700	400	1500	770	117	11550	1.19
	800	400	1600	880	134	13200	1.36
	900	400	1700	990	151	14850	1.53
	1000	400	1800	1100	167	16500	1.69
	1100	400	1900	1210	184	18150	1.87
	1200	400	2000	1320	201	19800	2.04
	1300	400	2100	1430	218	21450	2.21
	1400	400	2200	1540	234	23100	2.38
	1500	400	2300	1650	251	24750	2.55
	1600	300	2200	1760	263	25520	2.72
	1700	300	2300	1870	280	27115	2.89
38.1(1.5")	406	280	965	487	54	7285	0.40
	457	280	1016	547	61	8200	0.45
	508	280	1067	608	67	9115	0.49

Note: 1. Resistance tolerance: ±20% (published reference value). 2. For other sizes, send a drawing or the old element's dimensions for a check.

DIMENSIONS OF SIC HEATING ELEMENTS

1. ED (rod) type

Dia. (mm)	Hot zone (mm)	Cold zone (mm)	Overall length (mm)	Hot zone surface area (cm²)	Rated load (tested at 1050 °C)		
					Voltage (V)	Power (W)	Resistance (Ω)
38.1(1.5")	559	280	1118	669	74	10030	0.54
	610	280	1168	730	80	10950	0.59
	660	280	1219	791	86	11840	0.63
	711	280	1270	851	93	12760	0.68
	762	280	1321	912	100	13675	0.73
	813	394	1600	973	106	14590	0.78
	864	394	1651	1034	113	15505	0.93†
	914	394	1702	1095	119	16400	0.87
	965	280	1524	1155	126	17320	0.92
	1016	394	1803	1216	132	18230	0.97
	1118	394	1905	1338	146	20060	1.07
	1219	394	2007	1459	159	21875	1.16
	1312	394	2108†	1581	172	23705	1.26
	1422	394	2210	1702	186	25520	1.36
40	500	400	1300	628	75	9420	0.60
	600	400	1400	753	90	11295	0.72
	700	400	1500	880	105	13200	0.84
	800	400	1600	1005	118	14573	0.96
	900	400	1700	1130	133	16385	1.08
	1000	400	1800	1255	148	18198	1.20
	1100	400	1900	1381	163	20025	1.32
	1200	400	2000	1506	177	21837	1.44
	1300	400	2100	1630	192	23635	1.56
	1400	400	2200	1760	207	25520	1.68
	1500	400	2300	1880	222	27260	1.80
	1600	300	2200	2010	236	29145	1.91
	1700	300	2300	2140	250	31030	2.02
44.4(1.75")	508	280	1067	708	61	10625	0.36
	559	394	1346	780	68	11690	0.40
	610	305	1219	851	74	12760	0.43
	660	293	1245	921	81	13805	0.47
	711	394	1499	992	87	14970	0.51
	762	394	1549	1063	93	15935	0.55
	813	394	1600	1134	99	17000	0.59
	864	394	1651	1205	104	18070	0.61
	914	394	1702	1275	112	19115	0.65

Note: 1. Resistance tolerance: ±20% (published reference value). 2. For other sizes, send a drawing or the old element's dimensions for a check.

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DIMENSIONS OF SIC HEATING ELEMENTS

1. ED (rod) type

Dia. (mm)	Hot zone (mm)	Cold zone (mm)	Overall length (mm)	Hot zone surface area (cm²)	Rated load (tested at 1050 °C)		
					Voltage (V)	Power (W)	Resistance (Ω)
44.4(1.75")	965	394	1753	1346	118	20180	0.70
	991	419	1829	1382	120	20725	0.69
	1016	394	1803	1417	122	21250	0.70
	1118	419	1956	1560	136	23380	0.80
	1219	432	2083	1700	148	25490	0.87
	1270	394	2057	1772	155	26560	0.92
	1295	381	2057	1806	155	27082	0.89
	1321	394	2108	1843	161	27625	0.95
	1372	394	2159	1914	168	28690	1.00
	1422	394	2210	1984	173	29740	1.03
	1473	394	2261	2055	180	30805	1.07
	1524	394	2311	2126	186	31870	1.10
	1575	419	2413	2197	192	32940	1.15
	1626	394	2413	2268	197	34005	1.17
	1676	420	2515	2338	205	35050	1.24
	1829	280	2388	2551	218	38250	1.24
	2438	420	3277	3401	291	50985	1.66
50	1000	400	1800	1570	127	21980	0.73
	1500	400	2300	2360	191	33040	1.10
	1700	400	2500	2670	216	37520	1.24
	2000	400	2800	3140	253	43960	1.46
54(2.125")	508	305	1118	862	62	12920	0.30
	533	229	991	904	66	13555	0.32
	559	305	1168	948	69	14220	0.33
	610	305	1219	1035	75	15515	0.36
	660	305	1270	1120	80	16785	0.38
	686	280	1245	1164	84	17450	0.40
	711	305	1321	1206	88	18085	0.42
	762	305	1372	1293	93	19380	0.44
	813	419	1651	1379	99	20675	0.49
	864	419	1702	1466	105	21975	0.51
	914	420	1753	1551	112	23250	0.54
	965	419	1803	1637	226†	24545	0.57
	1016	419	1854	1724	123	25840	0.60
	1067	419	1905	1810	129	27140	0.63
	1118	419	1956	1897	135	28435	0.66

Note: 1. Resistance tolerance: ±20% (published reference value). 2. For other sizes, send a drawing or the old element's dimensions for a check.

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DIMENSIONS OF SIC HEATING ELEMENTS

1. ED (rod) type

Dia. (mm)	Hot zone (mm)	Cold zone (mm)	Overall length (mm)	Hot zone surface area (cm^2)	Rated load (tested at 1050 °C)		
					Voltage (V)	Power (W)	Resistance (Ω)
54(2.125")	1143	394	1930	1939	139	29070	0.67
	1168	420	2007	1982	142	29710	0.69
	1219	458	2134	2068	147	31005	0.71
	1270	419	2108	2155	153	32300	0.74
	1321	419	2159	2241	159	33600	0.77
	1372	419	2210	2328	166	34895	0.80
	1422	420	2261	2412	171	36170	0.82
	1473	419	2311	2499	179	37465	0.85
	1499	229	1956	2543	175	38125	0.80
	1524	394	2311	2585	184	38760	0.89
	1575	419	2413	2671	189	40060	0.90
	1626	419	2464	2758	196	41355	0.94
	1651	267	2184	2801	198	41990	0.93
	1676	420	2515	2843	202	42630	0.97
	1727	419	2565	2930	207	43925	0.99
	1778	419	2616	3016	213	45220	1.01
	1880	305	2489	3189	225	47815	1.06
	1981	254	2489	3361	238	50385	1.14
	2032	242	2515	3447	244	51680	1.15
	2083	330	2743	3534	250	52980	1.18
	2108	267	2642	3576	253	53615	1.19
	2134	241	2616	3620	255	54275	1.20
	2159	445	3048	3663	260	54910	1.23
	2286	343	2972	3878	274	58140	1.29
	2311	420	3150	3921	279	58780	1.32
	2413	267	2946	4094	290	61370	1.37
	2438	420	3277	4136	295	62010	1.40

Note: 1. Resistance tolerance: ±20% (published reference value). 2. For other sizes, send a drawing or the old element's dimensions for a check.

DIMENSIONS OF SIC HEATING ELEMENTS

2. DB (dumbbell) type

Hot zone			Cold zone		Overall length (mm)	Resistance at 1400 °C (Ω)	Max. load at temperature: W (top) · V/A (bottom)					
Ø (mm)	L (mm)	Hot zone surface area (cm²)	Ø (mm)	L (mm)			1100°C	1200°C	1250°C	1300°C	1350°C	1400°C
8	150	38	14	150	450	3.60	**900**	**790**	**675**	**520**	**380**	**190**
							57/15.8	53/14.7	49/13.8	43/12.0	37/10.3	26/7.2
8	180	45	14	60	300	4.40	**1080**	**950**	**815**	**635**	**460**	**230**
							69/15.7	65/14.7	60/13.8	53/12.0	45/10.2	32/2.7†
8	180	45	14	150	480	4.40	**1080**	**950**	**815**	**635**	**460**	**230**
							69/15.7	65/14.7	60/13.8	53/12.0	45/10.2	32/2.7†
14	200	88	22	250	700	1.80	**2110**	**1850**	**1570**	**1230**	**880**	**440**
							62/34.0	58/32.0	53/29.6	47/26.6	40/22.0	28/15.7
14	250	11†	22	250	750	2.20	**2640**	**2310**	**1980**	**1540**	**1100**	**550**
							76/34.7	71/32.6	66/30.0	58/26.6	49/22.4	35/15.8
14	250	11†	22	350	950	2.20	**2640**	**2310**	**1980**	**1540**	**1100**	**550**
							76/34.7	71/32.6	66/30.0	58/26.6	49/22.4	35/15.8
14	300	132	22	250	800	2.60	**3160**	**2770**	**2370**	**1850**	**1320**	**650**
							90/34.8	85/32.6	78/30.4	69/26.7	59/22.4	41/15.8
14	300	132	22	350	1000	2.60	**3160**	**2770**	**2370**	**1850**	**1320**	**650**
							90/34.8	85/32.6	78/30.4	69/26.7	59/22.4	41/15.8
14	400	176	22	250	900	3.50	**4200**	**3680**	**3150**	**2450**	**1750**	**875**
							121/34.7	113/32.5	105/30.0	93/26.4	78/22.5	55/15.9
14	400	176	22	350	1100	3.50	**4200**	**3680**	**3150**	**2450**	**1750**	**875**
							121/34.7	113/32.5	105/30.0	93/26.4	78/22.5	55/15.9
18	250	141	28	250	750	1.30	**3370**	**2960**	**2540**	**1970**	**1410**	**700**
							66/51.2	62/47.8	57/44.5	51/38.8	43/32.8	30/23.3
18	250	141	28	350	950	1.30	**3370**	**2960**	**2540**	**1970**	**1410**	**700**
							66/51.2	62/47.8	57/44.5	51/38.8	43/32.8	30/23.3
18	300	170	28	250	800	1.70	**4080**	**3570**	**3060**	**2380**	**1700**	**850**
							83/49.2	78/45.8	72/42.5	64/37.2	54/31.5	38/22.4

Note: 1. Resistance tolerance: ±20% (published reference value). 2. For other sizes, send a drawing or the old element's dimensions for a check.

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DIMENSIONS OF SIC HEATING ELEMENTS

2. DB (dumbbell) type

Hot zone			Cold zone		Overall length (mm)	Resistance at 1400 °C (Ω)	Max. load at temperature: W (top) · V/A (bottom)					
Ø (mm)	L (mm)	Hot zone surface area (cm²)	Ø (mm)	L (mm)			1100°C	1200°C	1250°C	1300°C	1350°C	1400°C
18	300	170	28	350	1000	1.70	**4080**	**3570**	**3060**	**2380**	**1700**	**850**
							83/49.2	78/45.8	72/42.5	64/37.2	54/31.5	38/22.4
18	400	226	28	250	900	2.30	**5400**	**4740**	**4060**	**3160**	**2260**	**1130**
							111/48.6	104/45.6	97/41.9	85/37.2	72/31.4	51/22.2
18	400	226	28	350	1100	2.30	**5400**	**4740**	**4060**	**3160**	**2260**	**1130**
							111/48.6	104/45.6	97/41.9	85/37.2	72/31.4	51/22.2
18	500	283	28	350	1200	2.70	**6800**	**5960**	**5100**	**3840**	**2860**	**1420**
							135/50.4	127/47.0	117/43.6	102/37.6	88/32.5	62/23.0
18	600	339	28	250	1100	3.40	**8150**	**7140**	**6130**	**4760**	**3400**	**1700**
							166/49.0	156/45.7	144/42.7	127/37.6	107/31.8	76/22.4
18	600	339	28	350	1300	3.40	**8150**	**7140**	**6130**	**4760**	**3400**	**1700**
							166/49.0	156/45.7	144/42.7	127/37.6	107/31.8	76/22.4
18	800	452	28	250	1300	4.60	**10800**	**9500**	**8140**	**6340**	**4530**	**2260**
							222/48.8	208/45.7	193/42.1	171/37.1	144/31.5	102/22.1
18	800	452	28	350	1500	4.60	**10800**	**9500**	**8140**	**6340**	**4530**	**2260**
							222/48.8	208/45.7	193/42.1	171/37.1	144/31.5	102/22.1
25	300	236	35	400	1100	1.00	**6040**	**4880**	**4080**	**3150**	**2180**	**1175**
							77.8/77.8	66.9/66.9†	64/64	56.2/56.2	46.7/46.7	34.3/34.3
25	400	314	35	400	1200	1.34	**7350**	**6920**	**5660**	**4400**	**3140**	**1760**
							99/76	95/73	86/66	76/58	64/49	48/36.5
30	500	472	45	400	1300	1.10	**10800**	**9870**	**8450**	**6570**	**4700**	**2350**
							109/99	104/95	96/88	85/77.3	72/65.4	51/46.2
30	600	566	45	600	1400†	1.28	**13500**	**11800**	**10300**	**7900**	**5660**	**2820**
							132/102	123/96	116/89	102/77.5	86/66	61/46.5
30	1000	942	45	500	2000	2.10	**22000**	**19800**	**17000**	**13200**	**9400**	**4700**
							214/103	204/97	189/90	160/79†	140/67	100/47

Note: 1. Resistance tolerance: ±20% (published reference value). 2. For other sizes, send a drawing or the old element's dimensions for a check.

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DIMENSIONS OF SIC HEATING ELEMENTS

Dimensions of SiC heating elements: U · SC · SCR · UX

3. U type

Dia. (mm)	Rated load (tested at 1050 °C)			
	Hot zone		Cold zone	
	Ω/mm	W/mm	Ω/mm	W/mm
12.0	0.01684	11.30	0.00110	0.60
14.0	0.01360	13.19	0.00090	0.80
16.0	0.00993	15.07	0.00080	1.00
20.0	0.00652	18.84	0.00040	1.10
25.0	0.00432	23.55	0.00030	1.20
30.0	0.00298	28.26	0.00020	1.30
31.7	0.00256	29.86	0.00013	1.40
35.0	0.00271	32.97	0.00015	1.50
38.1	0.00173	35.89	0.00009	1.60
40.0	0.00212	37.68	0.00010	1.70
45.0	0.00114	41.82	0.00007	1.80

Note: 1. Resistance tolerance: ±20% (published reference value). 2. For other sizes, send a drawing or the old element's dimensions for a check.

4. SC (single spiral) type

Dia. (mm)	Rated load (tested at 1050 °C)			
	Hot zone		Cold zone	
	Ω/mm	W/mm	Ω/mm	W/mm
12.0	0.02660	5.65	0.00576	0.25
14.0	0.02567	6.59	0.00450	0.30
16.0	0.02094	7.54	0.00387	0.50
20.0	0.01677	9.42	0.00291	0.60
25.0	0.01365	11.78	0.00174	0.93
30.0	0.01020	14.13	0.00120	0.95
31.7	0.00942	14.93	0.00114	0.97
35.0	0.00669	16.49	0.00096	0.98
38.1	0.00642	17.95	0.00075	0.99
40.0	0.00624	18.84	0.00072	1.00
45.0	0.00546	20.91	0.00066	1.02

Note: 1. Resistance tolerance: ±20% (published reference value). 2. For other sizes, send a drawing or the old element's dimensions for a check.

5. SCR (double spiral) type

Dia. (mm)	Rated load (tested at 1050 °C)			
	Hot zone		Cold zone	
	Ω/mm	W/mm	Ω/mm	W/mm
18	0.02158	8.48	0.00430	1.70
20	0.02302	9.42	0.00384	1.60
25	0.01969	11.78	0.00328	1.75
30	0.01523	14.13	0.00190	1.75
35	0.01224	16.49	0.00150	2.00
40	0.00905	18.84	0.00100	2.10
45	0.00960	20.91	0.00079	2.10
50	0.02953	23.55	0.00075	2.20
54	0.00636	25.43	0.00073	2.30

Note: 1. Resistance tolerance: ±20% (published reference value). 2. For other sizes, send a drawing or the old element's dimensions for a check.

6. UX (slot) type

Dia. (mm)	Rated load (tested at 1050 °C)			
	Hot zone		Cold zone	
	Ω/mm	W/mm	Ω/mm	W/mm
18	0.01938	8.48	0.00129	0.56
20	0.01420	9.42	0.00095	0.63
25	0.00902	11.78	0.00060	0.79

Note: 1. Resistance tolerance: ±20% (published reference value). 2. For other sizes, send a drawing or the old element's dimensions for a check.



GENERAL DESCRIPTION

MoSi2 heating elements

Molybdenum disilicide (MoSi2) heating elements are resistance heating elements based on molybdenum disilicide. When heated to high temperature in an oxidising atmosphere, a dense protective quartz film forms on the surface and protects the MoSi2 from further oxidation. This gives the element its high-temperature oxidation resistance. In an oxidising atmosphere the maximum temperature can reach 1900 °C; the applicable temperature range is 800–1850 °C. They are used as heating elements in high-temperature furnaces for ceramics, magnetic materials, glass, metallurgy and refractories.

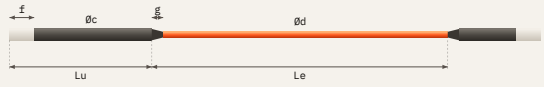
Grades: 1700, 1800, 1850 and 1900. Shapes: straight (I), U, W, L and special shapes. Diameters (hot zone / cold zone) from 3/6, 4/9, 5/10, 6/10, 6/12, 6/14, 7/14, 8/16 and 9/18 to 12/24 mm. Other sizes: send a drawing or dimensions for a check.

> 1900 grade: published maximum element temperature 1900 °C and maximum furnace temperature 1850 °C.

MOSI2 HEATING ELEMENTS

MoSi2 element types

I I (straight) type

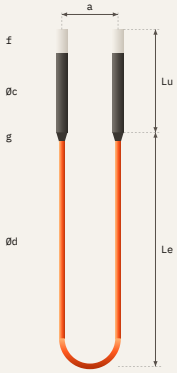


Mater.	1700, 1800, 1850, 1900
c/d	c = cold zone diameter, mm; d = hot zone diameter, mm
Le	Hot zone length, mm
Lu	Cold zone length, mm

Example: Material grade 1800, d=3mm, c=6mm, Le=140mm, Lu=125mm

Specify as: 1800, I , 3/6 x 140 x 125

U U type

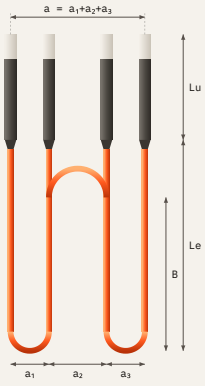


Mater.	1700, 1800, 1850, 1900
c/d	c = cold zone diameter, mm; d = hot zone diameter, mm
Le	Hot zone length, mm
Lu	Cold zone length, mm
a	Shank spacing, mm

Example: Material grade 1800, d=3mm, c=6mm, Le=140mm, Lu=125mm, a=25mm

Specify as: 1800, U , 3/6 x 140 x 125 x 25

W W type



Mater.	1700, 1800, 1850, 1900
c/d	c = cold zone diameter, mm; d = hot zone diameter, mm
Le	Hot zone length, mm
Lu	Cold zone length, mm
a	Shank spacing, mm

Example: Material grade 1800, d=3mm, c=6mm, Le=140mm, Lu=125mm, a=25mm

Specify as: 1800, W , 3/6 x 140 x 125 x 25

L L type



Element bent 90° Element bent 45°

Mater.	1700, 1800, 1850, 1900
c/d	c = cold zone diameter, mm; d = hot zone diameter, mm
Le	Hot zone length, mm
Lu	Cold zone length, mm
a	Shank spacing, mm
∠	Element bend

Example: Material grade 1800, d=3mm, c=6mm, Le=140mm, Lu=125mm, a=25mm, Element bent 90°

Specify as: 1800, L ,Bent 90°, 3/6 x 140 x 125 x 25

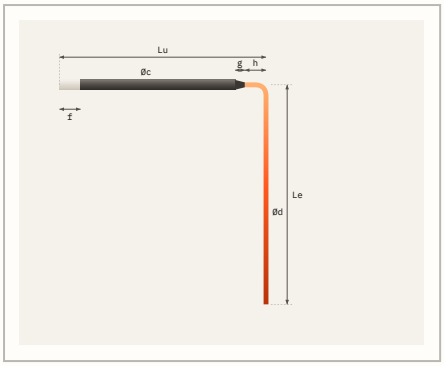
MOSI2 HEATING ELEMENTS

Detailed parameters of I, U and W type MoSi2 elements

Dia. d/c (mm)	Le / Lu (mm)	c	d	f	g	a (mm)	
		mm	mm	mm	mm	Stand.	Min.
3/6	customized	6	3	25	15	25	16
4/9	customized	9	4	25	15	25	19
6/12	customized	12	6	45	25	50	26
9/18	customized	18	9	75	30	60	38
12/24	customized	24	12	100	40	80	54

Note: dimensional tolerance ±5% (except c and d).

Detailed parameters of L type MoSi2 elements



h = 15 mm (0.59 in) 6/12 · 20 mm (0.79 in) 9/18 · 30 mm (1.18 in) 12/24
Leh = Le – 9 mm (0.35 in) 6/12 · – 11 mm (0.43 in) 9/18 · – 21 mm (0.83 in) 12/24

Dia. d/c (mm)	Le / Lu (mm)	c	d	f	g	k90°	k45°	m	a (mm)		n (mm)		r (mm)	
		mm	mm	mm	mm	mm	mm	mm	Stand.	Min.	Stand.	Min.	Stand.	Min.
3/6	customized	6	3	25	15	19	9	30	25	16	42	30	12	/
4/9	customized	9	4	25	15	19	9	35	25	19	47	42	12	/
6/12	customized	12	6	45	25	47	24	60	50	26	90	70	30	20
9/18	customized	18	9	75	30	71	32	90	60	38	135	100	45	30
12/24	customized	24	12	100	40	/	/	/	80	54	/	/	/	/

Customised special-shape MoSi2 elements

Special shapes: send a drawing, or the old element's dimensions and the furnace model, for a check.

MOSI2 HEATING ELEMENTS

Physical properties of MoSi2 heating elements

Volume density	Bend strength	Vickers hardness	Porosity	Water absorption	Thermal elongation
5.5-7.0 g/cm3	15-25 kg/cm3 †	(HV)570kg/mm2	7.4%	<0.2%	4%

Chemical properties of MoSi2 heating elements

High-temperature oxidation resistance: in a high-temperature oxidising atmosphere a dense protective quartz (SiO_2) film forms on the element surface and prevents oxidation of the MoSi2. When the element temperature exceeds 1700 °C, the SiO_2 layer (melting point 1710 °C) melts; surface tension draws it into droplets and it loses its protective effect. When the element is used again in an oxidising atmosphere, the SiO_2 layer regenerates. Note: the element is not suitable for long-term use in the range 400–700 °C; otherwise it will pulverise ("pest") because of intense low-temperature oxidation.

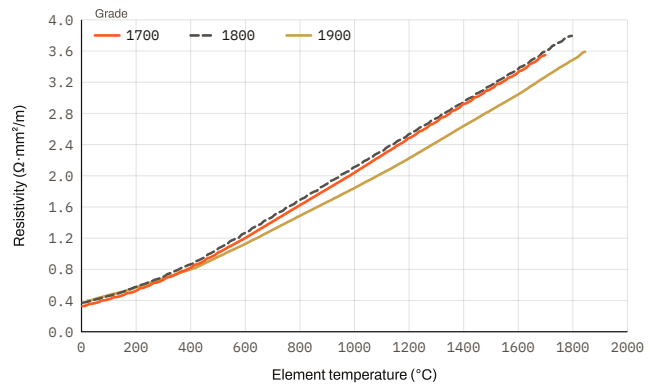
Maximum element temperature in different atmospheres

Atmosphere	Max. element temperature (°C)			
	1700 type	1800 type	1850 type	1900 type
Air	1700	1800	1830	1850
Nitrogen	1600	1700	1700	1700
Ar, Ne (argon, helium) †	1600	1700	1700	1700
Dry hydrogen (dew point –80 °C)	1150	1150	1150	1150
Wet hydrogen (dew point –20 °C)	1450	1450	1450	1450
Other gases (e.g. 10% CO2 / 50% CO / 15% H2)	1600	1700	1700	1700
Other gases (e.g. 40% CO2 / 20% CO)	1400	1450	1450	1450
Partially burnt ammonia (8% H2)	1400	1450	1450	1450

† Value as published in the source table. It does not match the neighbouring rows or the formula. Confirm before use.

MOSI2 HEATING ELEMENTS

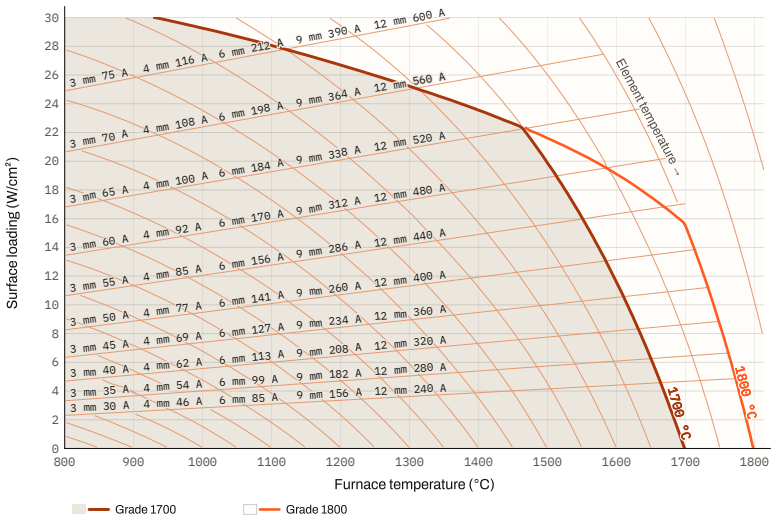
Resistance characteristics



Redrawn from the published reference chart; curves and values as published.

The resistance of a MoSi2 element rises rapidly with temperature (see chart). Under normal conditions the resistance generally does not change over time, so old and new elements can be used together.

Surface load



Temperature loading diagram. Redrawn from the published reference chart; curves and values as published.

The surface load of an element must be chosen correctly for the furnace construction, atmosphere and temperature. The chart below shows the relation between furnace temperature, element temperature and element surface load when the element's radiation is not obstructed.

Recommended surface load

Furnace temp. (°C)	Surface load of hot zone (W/cm²)
1400	< 18
1500	< 15
1600	< 12
1650	< 10
1700	< 8

MOSI2 HEATING ELEMENTS

MoSi2 heating elements: reference data

Each cell: power (W) · resistance (Ω) · voltage (V). Columns: Le (hot zone, mm). Rows: Lu (cold zone, mm).

1800 grade U type 3/6 mm elements

Lu \ Le	150	180	200	250	300	350
150	376 0.186 8.4	440 0.217 9.8	483 0.239 10.7	591 0.292 13.1	698 0.345 15.5	805 0.398 17.9
200	391 0.193 8.7	455 0.225 10.1	498 0.246 11.1	605 0.299 13.4	712 0.352 15.8	805† 0.405 18.2
250	405 0.200 9.0	470 0.232 10.4	512 0.253 11.4	620 0.306 13.8	727 0.359 16.2	834 0.412 18.5
280	411 0.203 9.1	475 0.235 10.6	518 0.256 11.5	626 0.309 13.9	733 0.362 16.3	840 0.415 18.7
300	420 0.207 9.3	484 0.239 10.8	527 0.260 11.7	634 0.313 14.1	742 0.366 16.5	849 0.419 18.9

ELEMENT TEMP.	FURNACE TEMP.	AMPERAGE	SURFACE LOAD
1700°C	1600°C	45A	11.5W/cm²

† Value as published in the source table. It does not match the neighbouring rows or the formula. Confirm before use.

1800 grade U type 4/9 mm elements

Lu \ Le	150	180	200	250	300	350
150	376 0.186 8.4	440 0.217 9.8	483 0.239 10.7	591 0.292 13.1	698 0.345 15.5	805 0.398 17.9
200	391 0.193 8.7	455 0.225 10.1	498 0.246 11.1	605 0.299 13.4	712 0.352 15.8	805† 0.405 18.2
250	405 0.200 9.0	470 0.232 10.4	512 0.253 11.4	620 0.306 13.8	727 0.359 16.2	834 0.412 18.5
280	411 0.203 9.1	475 0.235 10.6	518 0.256 11.5	626 0.309 13.9	733 0.362 16.3	840 0.415 18.7
300	420 0.207 9.3	484 0.239 10.8	527 0.260 11.7	634 0.313 14.1	742 0.366 16.5	849 0.419 18.9

ELEMENT TEMP.	FURNACE TEMP.	AMPERAGE	SURFACE LOAD
1700°C	1600°C	45A	11.5W/cm²

† Value as published in the source table. It does not match the neighbouring rows or the formula. Confirm before use.

MOSI2 HEATING ELEMENTS

MoSi2 heating elements: reference data

Each cell: power (W) · resistance (Ω) · voltage (V). Columns: Le (hot zone, mm). Rows: Lu (cold zone, mm).

1800 grade U type 6/12 mm elements

Lu \ Le	150	180	200	250	300	350	400	450	500	550	600
150	686 0.148† 5.7	800 0.056 6.7	877 0.061 7.3	1068 0.074 8.9	1260 0.087 10.5	1451 0.101 12.1					
200	711 0.049 5.9	825 0.057 6.9	902 0.063 7.5	1093 0.076 9.1	1285 0.089 10.7	1476 0.103 12.3	1667 0.116 13.9				
250	736 0.051 6.1	850 0.059 7.1	927 0.064 7.7	1118 0.078 9.3	1310 0.091 10.9	1501 0.104 12.5	1692 0.118 14.1	1884 0.131 15.7			
270	746 0.052 6.2	860 0.060 7.2	937 0.064 7.8	1128 0.078 9.4	1320 0.092 11.0	1511 0.105 12.6	1702 0.118 14.2	1894 0.132 15.8	2085 0.145 17.4		
300	761 0.053 6.3	875 0.061 7.3	952 0.066 7.9	1143 0.079 9.5	1335 0.093 11.1	1526 0.106 12.7	1717 0.119 14.3	1909 0.133 15.9	2100 0.146 17.5	2292 0.159 19.1	2483 0.172 20.7
350	786 0.055 6.5	900 0.063 7.5	977 0.068 8.1	1168 0.081 9.7	1360 0.094 11.3	1551 0.108 12.9	1742 0.121 14.5	1934 0.134 16.1	2125 0.148 17.7	2317 0.161 19.3	2508 0.174 20.9
400	811 0.056 6.8	925 0.064 7.7	1002 0.070 8.3	1193 0.083 9.9	1385 0.096 11.5	1576 0.109 13.1	1767 0.123 14.7	1959 0.136 16.3	2150 0.149 17.9	2342 0.163 19.5	2533 0.176 21.1
450		950 0.066 7.9	1027 0.071 8.6	1218 0.085 10.2	1410 0.098 11.7	1601 0.111 13.3	1792 0.124 14.9	1984 0.138 16.5	2175 0.151 18.1	2367 0.164 19.7	2558 0.178 21.3
500				1243 0.086 10.4	1435 0.100 12.0	1626 0.113 13.6	1817 0.126 15.1	2009 0.140 16.7	2200 0.153 18.3	2392 0.166 19.9	2583 0.179 21.5
550					1460 0.101 12.2	1651 0.115 13.8	1842 0.128 15.4	2034 0.141 16.9	2225 0.155 18.5	2417 0.168 20.1	2608 0.181 21.7
600					1485 0.103 12.4	1676 0.116 14.0	1867 0.130 15.6	2059 0.143 17.2	2250 0.156 18.8	2442 0.170 20.3	2633 0.183 21.9
650							1892 0.131 15.8	2084 0.145 17.4	2275 0.158 19.0	2467 0.171 20.6	2658 0.185 22.1
700							1917 0.133 16.0	2109 0.146 17.6	2300† 0.173† 20.8†	2492 0.173 20.8	2683 0.186 22.4

ELEMENT TEMP.	FURNACE TEMP.	AMPERAGE	SURFACE LOAD
1700°C	1600°C	120A-150A	10W/cm²

† Value as published in the source table. It does not match the neighbouring rows or the formula. Confirm before use.

MOSI2 HEATING ELEMENTS

MoSi2 heating elements: reference data

Each cell: power (W) · resistance (Ω) · voltage (V). Columns: Le (hot zone, mm). Rows: Lu (cold zone, mm).

1700 grade U type 9/18 mm elements

Lu \ Le	315	355	410	500	620	730	800	820	1000
470	5904 0.078 21.5	6562 0.087 23.9	7468 0.099 27.2	8949 0.118 32.5	10925 0.144 39.7	12736 0.168 46.3	13889 0.184 50.5	14218 0.188 51.7	17181 0.227 62.5
500	5938 0.079 21.6	6597 0.087 24.0	7502 0.099 27.3	8984 0.119 32.7	10960 0.145 39.9	12771 0.169 46.4	13923 0.184 50.6	14252 0.188 51.8	17216 0.228 62.6
520	5961 0.079 21.7	6620 0.088 24.1	7525 0.100 27.4	9007 0.119 32.8	10983 0.145 39.9	12794 0.169 46.5	13946 0.184 50.7	14275 0.189 51.9	17239 0.228 62.7
560	6007 0.079 21.8	6666 0.088 24.3	7571 0.100 27.5	9053 0.120 32.9	11029 0.146 40.1	12840 0.170 46.7	13992 0.185 50.9	14321 0.189 52.1	17285 0.229 62.9
580	6030 0.080 21.9	6689 0.088 24.3	7594 0.100 27.6	9076 0.120 33.0	11052 0.146 40.2	12863 0.170 46.8	14015 0.185 51.0	14344 0.190 52.2	17331 0.229 63.0
600	6053 0.080 22.0	6712 0.089 24.4	7617 0.101 27.7	9099 0.120 33.1	11075 0.146 40.3	12886 0.170 46.8	14038 0.186 51.0	14367 0.190 52.2	17331 0.229 63.0
630	6088 0.080 22.1	6746 0.089 24.5	7652 0.101 27.8	9133 0.121 33.2	11109 0.147 40.4	12920 0.171 47.0	14073 0.186 51.2	14402 0.190 52.4	17365 0.230 63.1

ELEMENT TEMP.	FURNACE TEMP.	AMPERAGE	SURFACE LOAD
1600°C	1500°C	275A	14.5W/cm²

Installation of MoSi2 heating elements

1. Vertical installation

MoSi2 elements are very brittle at room temperature but become plastic at high temperature. The best way to install a U type element is therefore vertical suspension: the element hangs vertically from the furnace roof in a support holder. This keeps mechanical stress off the hot zone; otherwise the element breaks easily.

MOSI2 HEATING ELEMENTS

Installation of MoSi2 heating elements

2. Element holder

The holder carries the full weight of the element and also fixes its position. Install it carefully so that the element hangs vertically. To avoid local overheating, the tapered part at the lower end of the element must extend into the furnace chamber.

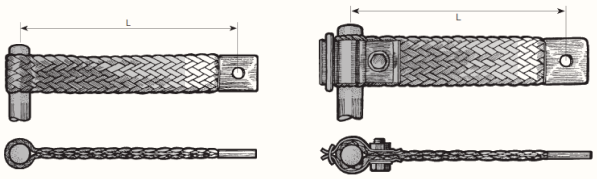
3. Connection strap

The conductors to the element are aluminium braid or multi-layer aluminium foil. The outer steel plate only clamps and does not carry current. The end of the conductor is connected to the busbar. So that no stress is passed to the element, the conductor should be slightly longer than the straight-line distance between element and busbar. When installing, do not fully tighten the clamp screws at first; tighten them again once the element is at high temperature, because the element then has some plasticity and is less likely to break. The temperature of the wire clamp should not exceed 200 °C.

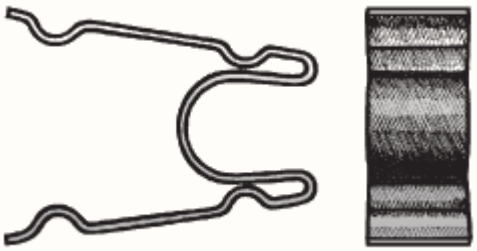
Accessories for MoSi2 heating elements

Accessories for MoSi2 elements include aluminium braided straps, spring clamps and holders.

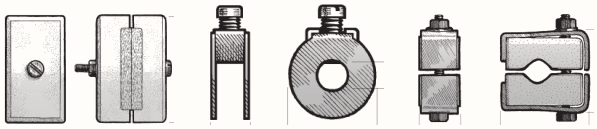
ALUMINIUM BRAIDED STRAPS



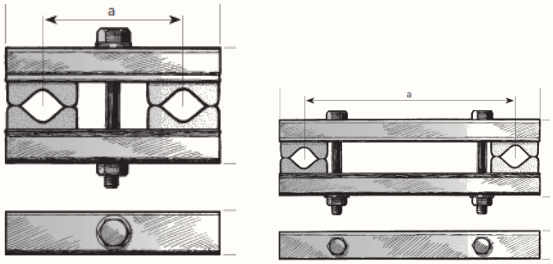
SPRING CLAMPS



ELEMENT HOLDERS · SINGLE-SHANK HOLDER



ELEMENT HOLDERS · TWO-SHANK HOLDER



MOSI2 HEATING ELEMENTS

Operation of the MoSi2 furnace

1. Drying of the furnace

New furnaces, or furnaces that have not been used for a long time, must be dried before use. The drying temperature is generally 100–200 °C, and long use of the element at low temperature causes low-temperature oxidation. In small furnaces drying is short, and a few hours have little effect on the elements. Large furnaces take a long time to dry and need attention. For ventilation it is best to open the furnace door; as the temperature rises it can be half closed, and closed completely above 1000 °C.

2. Furnace start-up

If the furnace is dry, or does not need drying, heating can start. To avoid overloading the electrical equipment through a high inrush current, start up in the following steps.

Small furnace (power < 100 kW)		Large furnace (power 100–500 kW)	
Furnace temp. (°C)	Voltage	Furnace temp. (°C)	Voltage
20~150	1/3 working voltage	20~300	1/3 working voltage
150~500	2/3 working voltage	300~700	2/3 working voltage
500~ working temp.	Full working voltage	700~ working temp.	Full working voltage

3. Replacement of elements

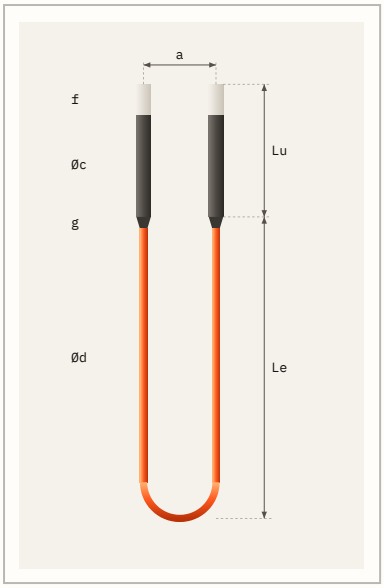
If an element is found damaged during operation, first locate it and have a pre-assembled element ready. Loosen the screws connecting the damaged element's clamp lead to the busbar, remove the ceramic wool, and pull the element out together with its lead-through brick. Insert the new pre-assembled element from the furnace roof, connect the lead, refill the ceramic wool, and heating can resume.



Photos: elements and packing. Drawings are schematic and not to scale.

DENTAL FURNACE ELEMENTS

Dental MoSi2 U-elements: how to measure



Le Le (hot zone)

Lu Lu (cold zone)

a a (shank spacing)

d d = hot-zone Ø

c c = cold-zone Ø

Written as d/c – Le – Lu – a

`Example: 4/9 – 100 – 160 – 25`

= hot zone 4 mm, cold zone 9 mm, Le 100 mm, Lu 160 mm, a 25 mm

PLEASE ALSO SEND:

- furnace brand, model and serial number
- number of elements in the furnace
- photo of the old element with a ruler

Measure the old element with a caliper. Elements that look the same can still differ in Le, Lu, a, diameter or where the holder clamps. Furnaces of the same model can use different elements by year or power version.

Sizes we can quote now (MoSi2 U, 1800 grade)

d/c (mm)	Le (mm)	Lu (mm)	a (mm)	Note
4/9	100	160	25	Two quality options available; ask for details
4/9	70	160	25	
4/9	85	125	to confirm	a (shank spacing) to be confirmed with your old element
4/9	105	130	to confirm	
4/9	80	130	to confirm	
4/9	100	125	to confirm	
4/9	90	140	to confirm	
3/6	75	125	to confirm	

Other sizes: send the dimensions or the part number. Grade and maximum temperature are confirmed in writing for each order.

Dental SiC elements

Type	Size (mm)	Note
SiC slim rod	Ø14 · hot zone 115 · cold zone 95 · overall 305	Elements wired in series are usually changed as a set; tell me how many the furnace uses
SiC spiral (SGR)	Ø20 · overall 290	Full drawing on request

DENTAL FURNACE ELEMENTS

What furnace makers document

Each line comes from the furnace maker's manual, catalogue or parts page, or, where marked, from a dental supplier's listing. Brand and model names are used only to identify the furnace an element is intended for. PMEXO is not affiliated with these companies and does not sell their original parts.

Furnace (brand · model)	Heating element, as documented	Elements per furnace	Item number found	Source
Ivoclar Programat S1 / S1 1600	Material not named	Not published; the cleaning section shows a left and a right element	Not published	Ivoclar operating instructions; S1 1600 guidelines
Dentsply Sirona inFire HTC speed	MoSi heating elements	Six	Not given in the service manual	Service manual, 10.2018
Shenpaz Sintra / Sintra Plus	Material not named in the manual; U-shaped in a US dental supplier's listing	Three; replace all three at the same time	MFG034A, in a US dental supplier's listing for Sintra Plus, Pro 90/120 and CS	Shenpaz instruction manual, 2018; US Dental Depot listing
Nabertherm LHT 01/17 D, LHT 03/17 D	Special molybdenum disilicide heating elements	Not stated in the manual	Not published; for a quotation Nabertherm asks for the furnace serial number	Operating instructions M01.1068, 2025; Nabertherm FAQ
Nabertherm LHTCT	SiC (silicon carbide)	Not stated; replaced only as a complete set	Not published	Nabertherm FAQ
VITA ZYRCOMAT 6000 MS	Molybdenum disilicide, individually exchangeable	Four	D53041	VITA furnaces catalogue, 05-2015
Zirkonzahn Zirkonofen 600 (600/V2, V3, V4)	MoSi2, per the 600/V3 and 600/V4 product pages	Two	ERAA0331, listed for Zirkonofen 600 / 700 / 700 Ultra Vakuum	Zirkonzahn product and accessory pages; manual 2020

None of these documents gives the element dimensions (diameters, Le, Lu, a). That is why every check starts from the old element or a photo next to a ruler. “Not published” means it was not found in the documents listed; it may exist in service documents not seen. Links to every source: pmexo.com/heating-elements/dental-furnace-models/

Replacing: what the documents say

- Shenpaz Sintra: replace all three elements at the same time.
- Nabertherm: MoSi elements can be replaced one at a time; the SiC elements of LHTCT furnaces only as a complete set.
- Ivoclar Programat S1: run the cleaning program first; Ivoclar recommends new elements only if there is no improvement after several cleaning cycles.

What I need for a quote

01 Furnace brand, model and serial number (type plate)

02 Number of elements per furnace and the quantity you need

03 d/c, Le, Lu and a of the old element, or the item number from the furnace manual, with a photo next to a ruler

04 Delivery address (for a courier or forwarder rate)



PMEXO · EDITION OCTOBER 2026

Glossary

Abbreviations as used in the tables of this catalogue.

OD	Outer diameter of a SiC element, mm
HZ	Hot zone: the heating section inside the chamber, mm
CZ	Cold zone (cold end): low-resistance terminal section through the wall, mm
OL	Overall length, mm
A	Shank spacing of SiC multi-leg elements, mm
d / c	MoSi2: hot zone diameter / cold zone diameter, mm (e.g. 6/12)
Le	MoSi2 hot zone length, mm
Lu	MoSi2 cold zone length, mm
a	MoSi2 shank spacing, centre to centre, mm
Grade	MoSi2 grade 1700 / 1800 / 1850 / 1900: published maximum element temperature, °C
R	Resistance of the element, Ω; SiC tables state the reference condition
W/cm²	Surface load: power per cm² of hot-zone surface
Ageing	Slow rise of SiC resistance during long-term operation
FOB / EXW	Incoterms used for PMEXO quotations

Where a published value does not match its neighbours or its formula, it is kept as published and marked †. Please confirm such values before use.

How a size is written · examples from this catalogue

SiC · ED (rod) type	**ED,54/1575/2413/0.9Ω**
SiC · DB (dumbbell) type	**DB,18/28/300/350/1.7Ω**
SiC · U type	**U,20/300/400/60/2.24Ω**
MoSi2 · I (straight) type	**1800, I , 3/6 x 140 x 125**
MoSi2 · U type	**1800, U , 3/6 x 140 x 125 x 25**

SiC: type, then the dimensions in mm in the order used on that type's page, then the resistance. MoSi2: grade, type, d/c × Le × Lu (× a for U). See the type pages for the drawings.



CONTACT

Send me the old element

Part number, or a photo next to a ruler with d/c, Le, Lu and a. I check it against the tables and confirm the size to you in writing. Quotations: FOB or EXW.

The elements are made in Dengfeng, China. Send me the part number or a photo with dimensions and I'll check it.

Jingwen Dong | PMEXO / pmexo.com
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PMEXO

All data are for identification and reference only. Every size is confirmed with you in writing before a quotation. The elements are made in Dengfeng, China. Reference data as published; not independently tested by PMEXO. Check against your old element before ordering.