



TM

Tangshan LENGSTech Co., Ltd.

SiC Ceramic & Kiln Furniture



Silicon Carbide Ceramic Expert & Genuine Supplier

www.lengstech.com



Who We Are

LENGSTech was founded by the most experienced team of technical SiC ceramics & materials in China. The company is an integrated enterprise located in Tangshan, the famous capital of porcelains in north China. We're dedicated in providing our customers reliable products & services with our over ten years knowledge, resources & international serving experience.

Our main products are RSiC, NSiC, SiSiC/RBSiC and Bonded SiC. These materials are widely used in technical ceramics industries, sanitary ware & table ware industries, electrical porcelains, insulators & abrasives and other refractory & foundry industries. And we're also able to supply Si₃N₄, Cordierite & Mullite, Alumina and other refractory ceramic products. Our team is happy to help our customers to get the best solution & one stop service. We're together with you to control the cost & reduce fuel consumption.

Our products are exported to over 20 countries during all these years & we get very good reputation. We always welcome new customers & we're looking for long term & stable cooperation. And we're happy to hear comments & suggestions about our products & service.

We believe in "Devotion makes profession, which achieves perfection."



We make your drawings into products



What We Do

LENGSTech provides you a wide range of SiC ceramic & kiln furniture products, refractory solutions & technical supports. Just inform us the details of application & requirements of working condition and we'll work out the best solutions for you.

- 24 hours online service & in time response.
- Material selection, technical support & free drawings.
- Short lead time & on-site inspection on behalf of customers.
- One stop service includes all refractory products & accessories.

SiC Creamics

RSiC

NSiC

SiSiC/RBSiC

SSiC

OSiC

Why SiC Ceramic Products

- High temperature tolerance
- High strength
- High thermal conductivity
- High wear resistance
- High corrosion resistance
- High thermal shock resistance
- Low thermal expansion
- Excellent mechanical performance

Technical Data Sheet

Item	RSiC	NSiC	SiSiC/RBSiC	OSiC
Full Name	Recrystallized Silicon Carbide	Nitride Bonded Silicon Carbide	Reaction Bonded Sintered Silicon Carbide	Oxide Bonded Silicon Carbide
Color	Dark gray with crystal light	Gray	Dark gray	Black
Max Working Temperature (°C)	1650	1450	1380	1400
Bulk Density (g/cm ³)	2.72	2.8	3.02	2.7-2.8
Porosity (%)	≤17	12-15	<0.1	≤15
Compression Strength (Mpa)	600	650	160	>90
Bending Strength (Mpa)	90	180	250	>45
Young's Modulus (Gpa)	250	200-250	300	---
Thermal Conductivity (W/MK)	23	17	45	14
Thermal Expansion 20-1000 °C (10-6K-1)	4.7	5.0	4.5	4.8
Moh's Hardness	9.5	9	9.66	---
SiC (%) Si ₃ N ₄ (%)	99.5	70-80 20-30	85	≥85

Shaped products

Beams, Batts, Tubes, Fish Setters, Pillars, Burner Nozzles, Thermocouple Protection Tubes, Riser Tubes, Heating Protective Tubes, Cooling Air Pipes, Rollers, Linings, Crucibles, Saggars, Mechanical Seal Parts & Other Customized Parts.

Beams

SiC beams have advantages of excellent thermal conductivity, light & thin, which will save energy & space of the kiln car. SiC Beams are very widely used as kiln loading structure systems of tunnel kilns, shuttle kilns & other industrial kilns.

The main materials in the market are as below:



RSiC



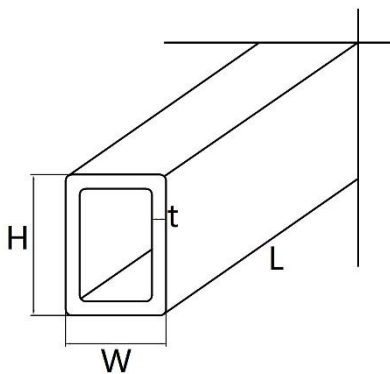
NSiC



SiSiC

The shaped products can be divided into Pillars, Main Beams, Cross Beams, Supports & Customized Shape of Beams.

The standard sizes are as below:



Size of Section mm		Length mm	Wall Thickness mm
W	H	L	t
30	30	≤1500	5
30	40	≤1500	5
40	40	≤1500	5-6
40	50	≤1500	5-6
40	60	≤2000	6
50	50	≤2000	6
50	60	≤2000	6-7
50	70	≤2000	8
60	90	≤2600	9
80	80	≤2600	7-8
100	100	≤2600	8-10
110	110	≤2600	10

● RSiC (Re-SiC)-Recrystallized Silicon Carbide

RSiC beams are higher in strength & no deformation even at working temperature of 1650-1700°C. And excellent thermal conductivity & less weight make it saving energy & space with longer serving life.

Forming Method: Slip-Casting



Main Applications:

- ✧ Al₂O₃ & Zr₂O₃ Ceramics
- ✧ ITO & Magnetic Materials
- ✧ High Temperature Fiber Products
- ✧ Ceramic Foam, Filter, Honey Comb
- ✧ Alumina Rollers
- ✧ Cordierite Mullite Ceramics

And RSiC beams can be made into hollow beams & solid beams. The solid beams are flat beams with thickness less than 30 mm, which are used for alumina rollers hanging.



● NSiC (Si₃N₄-SiC)-Nitride Bonded Silicon Carbide

Advanced NSiC beams are good with resistance of oxidation at working temperature below 1450°C. The strength is high & it's much thinner & lighter than traditional nitride bonded products.

Forming Method: Slip-Casting

Main Applications:

- ✧ Sanitary wares & table wares
- ✧ Electrical porcelains
- ✧ Other Ceramics with temperature below 1450°C



Standard NSiC Beams (2 times fired)



NSiC I Shape Supports & Loading Beam



● SiSiC (RBSiC)-Reaction Bonded Sintered Silicon Carbide

SiSiC beams are more widely used than NSiC & RSiC beams at working temperature below 1380°C. It's an ideal loading structure for most kinds of kilns with high strength & no deformation, excellent thermal conductivity & less fuel consumption.

Forming Method: Extrusion



Main Applications:

- ✧ Sanitary wares
- ✧ Dinner ware, stone ware
- ✧ Hand made pottery & porcelain
- ✧ Electrical porcelain
- ✧ Tiles & ceramic moulds
- ✧ Other ceramics with temperature below 1380°C

Standard SiSiC Beams



SiSiC Kiln Furniture Systems (Light weight system)



Plates

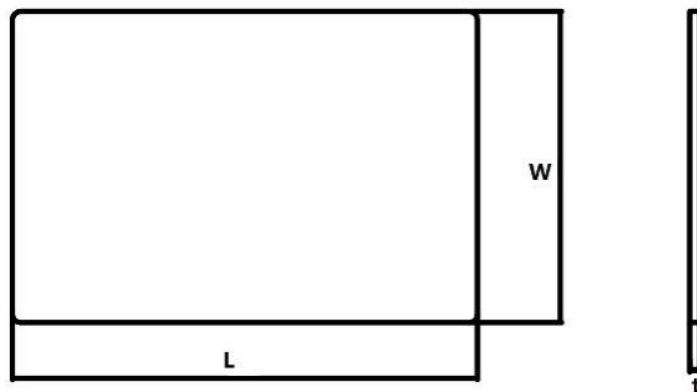
SiC plates have advantages of excellent thermal conductivity, light & thin, which will save energy & space of the kiln car. SiC plates are very widely used as kiln shelves/batts of tunnel kilns, shuttle kilns & other industrial kilns.

The main materials in the market are as below:



The shaped products can be divided into square, rectangle & round plates or with holes, rims, slots, grinded plates, fish setters & slabs and customized shape of plates.

The standard sizes are as below:



Length mm	Width mm	Thickness mm
L	W	t
≤150	≤150	≥5
150<L<1000	150<W<600	5-10
1000<L<1500	150<W<600	10-15

● RSiC (Re-SiC)-Recrystallized Silicon Carbide

RSiC plates are mainly used in industrial ceramic factories. RSiC products are high in strength & no deformation even at working temperature of 1650-1700°C. And excellent thermal conductivity & less weight which make it energy & space saving with longer serving life.

RSiC plates are widely used as kiln shelves for technical ceramics, refractory ceramics, ceramic filters & foams etc.

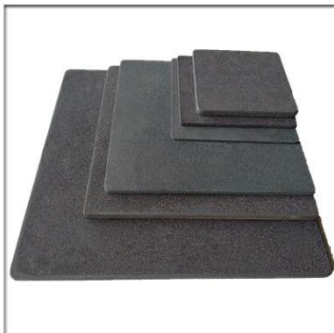
Forming Method: Slip-Casting



Main Applications:

- ✧ Al₂O₃ & Zr₂O₃ Ceramics
- ✧ ITO & Magnetic Materials
- ✧ High Temperature Fiber Products
- ✧ Ceramic Foam, Filter, Honey Comb
- ✧ Cordierite Mullite Ceramics
- ✧ Handmade Ceramics & Porcelain

Standard RSiC Plates



Grinded RSiC Plates



● NSiC (Si₃N₄-SiC)-Nitride Bonded Silicon Carbide

Advanced NSiC plates are getting more & more popular in dinner ware & sanitary ware industries. The strength is higher, thickness thinner, weight lighter & working life is much longer than normal type of oxide bonded SiC kiln shelves.

And there's no expansion gaps on plates and it's mirror like surface because NSiC is 2 times fired after oxidating in furnace. And NSiC plates are often coated with alumina on the surface to separate products and shelves.

Forming Method: Slip-Casting

Main Applications:

- ✧ Dinner ware, Stone ware
- ✧ Sanitary ware
- ✧ Electrical porcelain
- ✧ Handmade ceramic
- ✧ Pottery & porcelain
- ✧ Other Ceramics with temperature below 1450°C



Standard NSiC Plates (alumina coating available)



NSiC Setter Plates (alumina coating available)



● OSiC- Oxide Bonded Silicon Carbide

Oxide Bonded SiC plates are widely used because of its economic cost. The obvious differences from NSiC are the surface appearance, expansion gaps, thickness and working life. Now the OSiC density can reach 2.8g/cm³ which is same with NSiC. And the max working temperature of oxide bonded SiC is up to 1400°C.

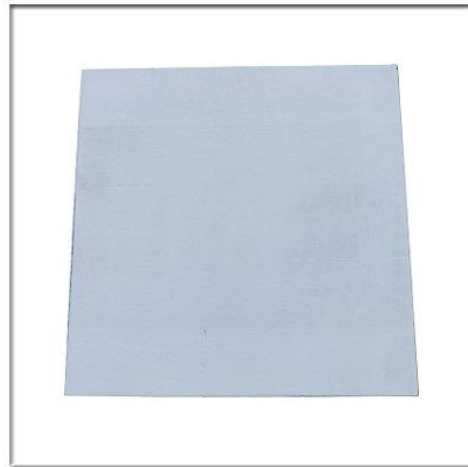
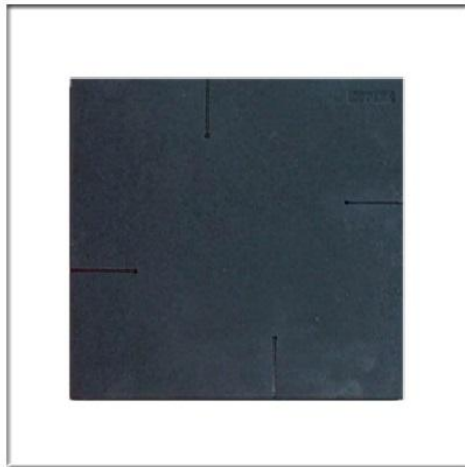
Forming Method: Compression Molding



Main Applications:

- ✧ Dinner ware, stone ware
- ✧ Sanitary ware
- ✧ Electrical porcelain
- ✧ Handmade ceramic
- ✧ Pottery & porcelain
- ✧ Tiles & ceramic moulds

Standard OSiC plates (One side black and the other side with alumina coating)



OSiC fish setters (alumina coating available)



Tubes

SiC tubes have advantages of excellent thermal conductivity, high strength, good mechanical & chemical identity, which are not only used in ceramics industry, but also more widely used in metallurgy & foundry industries & other refractory areas.

The main materials in the market are as below:



RSiC

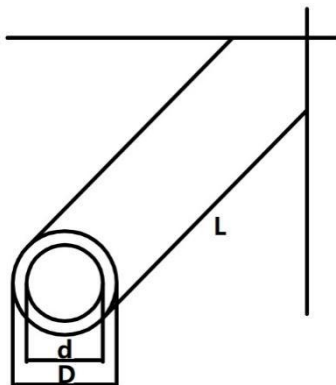


NSiC



SiSiC

The standard sizes are as below:



Size of Section mm		Length mm	Wall Thickness mm
D	d	L	t
30	17	≤1500	6.5
30	20	≤1500	5
40	25	≤1500	7.5
40	28	≤1500	6
45	31	≤1500	7
45	33	≤1500	6
50	36	≤2000	7
50	38	≤2000	6
55	41	≤2000	7
55	43	≤2000	6
60	46	≤2600	7
60	48	≤2600	6

● RSiC (Re-SiC)-Recrystallized Silicon Carbide

RSiC tubes are widely used in technical ceramic industry & other high temperature areas of 1650-1700°C.

The shaped products include standard tubes, rods, rollers, rings, linings, burner nozzles, thermocouple protection tubes etc.

Forming Method: Slip-Casting



Main Applications:

- ✧ Furnace Tubes
- ✧ Burner Nozzles-Gas
- ✧ Thermocouple Protection Tubes
- ✧ Rollers
- ✧ Rings
- ✧ Technical Ceramics
- ✧ Other High Temperature Industries

Standard RSiC Tubes, Rods & Burner Nozzles, Thermocouple Protection Tubes



Other customized RSiC tubes & rings (Drawings needed)



● NSiC - Nitride Bonded Silicon Carbide

Advanced NSiC tubes are widely used at metallurgy & foundry area because of the advantage of anti-corrosion, resistance to chemical & abrasive attack, thermal shock resistance, acid & alkali resistance & no Fe added etc.

NSiC can contact directly with non-ferrous metal fluids at high working temperature. The strength is high with long serving lives. We can also provide Silicon Nitride (Sialon), Si₃N₄ is much more expensive than NSiC & the performance is better & serving life is much longer.

The shaped products include standard tubes, thermocouple protection tubes, riser tubes, heating protective tubes, radiant tubes, nozzles, seal rings, turbine etc.

NSiC Forming Method: Slip-Casting

Main Applications:

- ✧ Metallurgy & foundry industry
- ✧ Chemical industry
- ✧ Ceramics industry
- ✧ Other refractory areas



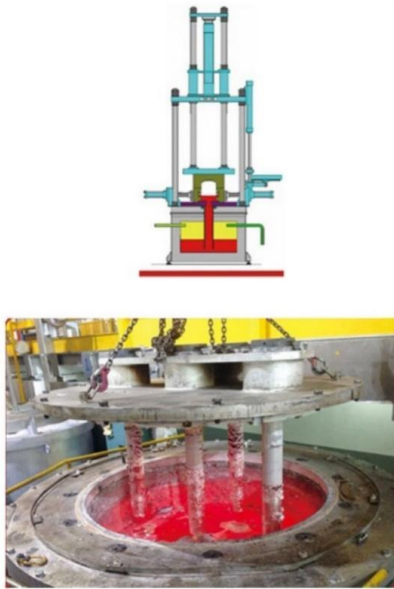
Thermocouple Protection Tubes (NSiC vs Si₃N₄)



Heating Protective Tubes/Radiant Tubes (NSiC vs Si₃N₄)



Riser Tubes (NSiC vs Si₃N₄)



● SiSiC (RBSiC)-Reaction Bonded Sintered Silicon Carbide

SiSiC tubes are widely used in daily used ceramic industry as it is an ideal loading structure for most kinds of kilns.

The shaped products include rollers, burner nozzles, cooling air pipes, radiation pipes, linings, thermocouple protection tubes etc. We are able to offer alumina rollers as well.

Forming Method: Extrusion or Slip-Casting

Main Applications:

- ✧ Sanitary ware & dinner ware
- ✧ Electrical porcelain
- ✧ Thermocouple Protection Tubes
- ✧ Burner Nozzles
- ✧ Rollers
- ✧ Linings
- ✧ Other Ceramics with temperature below 1380°C



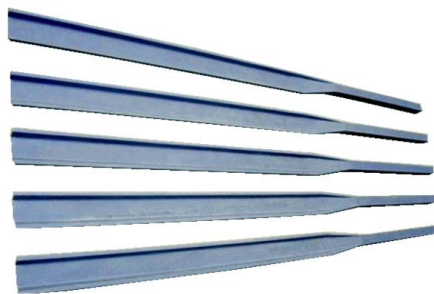
Standard Tubes, Rollers & Burner Nozzles



SiSiC Radiant Tube, Linings, Desulfurization & Spray Nozzle etc



SiSiC Paddles, Cooling Air Tubes



Saggers & Crucibles

SiC saggers & crucibles have advantages of high strength, excellent thermal conductivity, long serving life and high temperature etc. SiC saggers & crucibles are widely used in metallurgy, chemical industries because of the good performance.

The main materials in the market are as below:



RSiC



NSiC



SiSiC

● RSiC (Re-SiC)-Recrystallized Silicon Carbide

RSiC saggars & crucibles have the advantages of excellent performance in high working temperature, high strength, oxidation resistance, corrosion resistance etc. The shapes can be square, rectangular, round etc.

Forming Method: Slip-Casting

Main Applications:

- ✧ Metallurgy industry
- ✧ Chemical industry
- ✧ Powder sintering
- ✧ Microwave heating



● NSiC-Nitride Bonded Silicon Carbide

Advanced NSiC saggars & crucibles are widely used at metallurgy, chemicals area because of the advantage of high working temperature, resistance of metal corrosion. The shapes can be square, rectangular, round etc.

Forming Method: Slip-Casting

Main Applications:

- ✧ Metallurgy industry
- ✧ Chemical industry
- ✧ Powder sintering
- ✧ glasses



● SiSiC(RBSiC)-Sintered Silicon Carbide

SiSiC saggars & crucibles are widely used too and shapes are more available like square, rectangular, round & many other customized shapes.

Forming Method: Slip-Casting

Main Applications:

- ✧ Metallurgy industry
- ✧ Chemical industry
- ✧ Powder sintering
- ✧ glasses



● OSiC saggars and crucibles are also available



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