

## Raw Materials of Ferro Silicon Production

### 1. Types of Raw materials

No.	Raw Material Name	Type	Unit Consumption (t/t)	Bulk Density (t/m <sup>3</sup> )	Remark
1	Silica	1		1.3	
2	Carbon Steel Chips	1		2.0	Bending length < 100mm
3	Carbon Reluctant	3		0.5	Including coke, semi-coke, anthracite and fixed carbon ≥82%

### 2. Raw Materials Consumption

No.	Item	Tonnage consumption	Remark
1	Silica	1780-1850kg/t	SiO <sub>2</sub> > 97%
2	Carbon Steel Chip	220-230 kg/t	Fe > 95%
3	Dry Coke	960kg/t	Fixed Carbon ≥82%
4	Electrode paste	45kg/t	
5	Electrode shell	3-6 kg/t	
6	Power	84000-9000kWh/t	
7	Output per Day	25t/d	
8	Output per Year	8250t/a	330 Day/a
9	Mould & slag can	15~20kg/t	
10	Refractory materials	15-25 kg/t	
11	Main Elements Recovery Rate	92%	

Note:

1. Consumption of Coke is dry weight
2. The consumption of silica, coke and power is calculated on the base of producing one ton of FeSi 75%
3. The output is calculated in according to  $\cos \phi 0.75$

### 3. Size of raw materials

Silica Quartz: 40-120 mm

Coke: 5-15 mm

Steel scraps: <100 mm (Fe75% powder)

Semi-coke: 5-18 mm

### 4. Physical & chemical specifications

Silica Quartz:  $\text{SiO}_2 > 97\%$   $\text{Al}_2\text{O}_3 \leq 0.85$   $\text{P}_2\text{O}_5 < 0.02\%$ , clean surface and high heat stability;

Coke: fixed carbon  $> 80\%$ , ash  $\leq 14\%$ ;

Steel scrap: carbon steel with Fe  $> 95\%$ ,