

## Typical chemical composition (%)

C	Cr	Ni	Si	Mn	Fe
0.15 - 0.35	17 - 19	8 - 10	0.5 - 2.5	2 max.	Matrix

## Normalized designation

AFNOR	EN	DIN
Z25 CNS 18-09-02 - M	GX 25 CrNiSi 18-09	1. 4825

## Microstructure

Austenitic with carbide precipitation.

## Elaboration

The SGS-R18-09 alloy is melted in an induction furnace with an argon shroud. It is cast in sand moulds or ceramic shells.

## Heat treatment

Solution annealing, rapid quenching.

## Mechanical properties

	Rp 0.2 (MPa)	Rm (MPa)	A (%)
20°C	230	450	15

## Creep resistance

Breaking stress N/mm<sup>2</sup> (MPa) for :

	600°C	700°C	800°C	900°C
Duration of 10,000 hours	77	42	20	9

## Maximum operating temperature

950°C.

## Machinability

Cutting speed : 80 - 110 m/min (with M-type carbide tooling).

## Weldability

Good weldability. Electrode or TIG.

## Physical properties

Thermal conductivity at 20°C : 15 W.m<sup>-1</sup>.K<sup>-1</sup>  
 Thermal capacity at 20°C : 500 J.kg<sup>-1</sup>.K<sup>-1</sup>  
 Thermal expansion coefficient (20°C - 400°C) : 17.4 10<sup>-6</sup> K<sup>-1</sup>  
 Non-magnetic

## Fields of use

Furnace equipment, cement works, metallurgy, petrochemical and glass industries.

**The SGS-R18-09 refractory steel** has a composition close to SGS-R25-20. It can be a good economical alternative to SGS-R25-20 when used at lower temperatures.

## Contact

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