

Typical chemical composition (%)

C	Cr	Ni	Si	Mn	W	Fe
0.48 - 0.53	25 - 26.5	47 - 50	0.6 - 1	0.6 - 1	5 - 5.7	Matrix

Normalized designation

AFNOR	EN	DIN
Z45 NCW 45-25 - M	GX 45 NiCrW 48-28	2.4879

Microstructure

The alloy is comprised of an austenitic, nickel-based matrix with a network of tungsten and chromium carbides.

Elaboration

The SGS-R26-52 alloy is melted in an induction furnace with an argon shroud. It is cast in sand moulds or ceramic shells.

Heat treatment

Carbide precipitation treatment.

Mechanical properties

	Rp 0.2 (MPa)	Rm (MPa)	A (%)
20°C	240	440	3

Hardness

210 HB.

Creep resistance

Stress N/mm² (MPa) applied during 10,000 hours for chemical properties at high temperature :

	700°C	800°C	900°C	1,000°C
Strain of 1 %	-	45	25	11
Breaking	84	50	29	14

Due to the high nickel content in this alloy, recarburizing and re-nitriding at the surface is limited. On the other hand, the alloy cannot be used in a sulphurous environment.

Maximal operating temperature

1,200°C.

Machinability

Advised cutting speed : 60 - 70 m/min (with M-type carbide tooling).

Weldability

Electrode or TIG.

Physical properties

Non-magnetic.

Fields of use

Heat treatment furnaces, cement works, the petrochemical industry, miscellaneous tooling.

The SGS-R26-52 nickel-based refractory alloy

offers excellent creep resistance and good chemical properties at high temperatures. Thanks to its properties, it is a good candidate for the most demanding of applications.

Contact

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