

# CrC/25%NiCr Thermal Spray Powder SURPREX CNC25

## ■SURPREX CNC25

SURPREX CNC25 is an agglomerated and sintered composite powder of CrC/25%NiCr for thermal spray.

<Product feature>

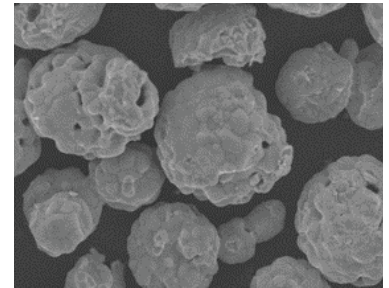
1. Free of spitting by powder classification technology and particle strength control
2. Designed for various types of High-Velocity Flame Spray Guns to achieve higher deposition efficiency

## ■Typical Particle Size Distribution

Type	Size(μm)	+53	+45	+38	+32	-20	-15
L	-53+15	4.7	27.3	48.9	—	4.9	1.0
J	-45+15	—	6.9	28.4	42.6	4.3	0.6

FUJIMI has sophisticated classification technology and 2 types of powder size are available for in the SURPREX CNC25 to suit different spray guns. Powder size can also be customized to suit a wide range of application needs.

## ■SEM Image of Spray Powder Particles

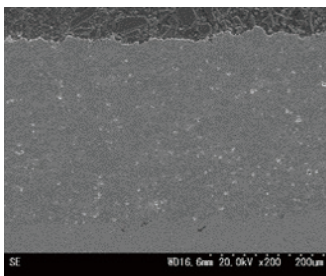


## ■Typical Chemical Composition

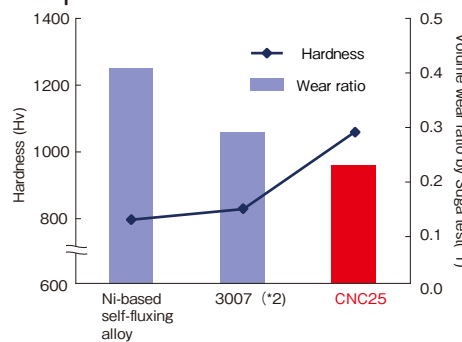
Composition(wt%)			
Cr	Ni	C	Fe
Bal.	20.0	10.0	0.3

## Coating Characteristics

### ■Structure of SURPREX CNC25



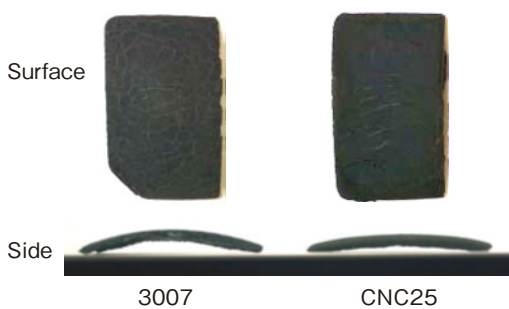
### ■Comparative Wear Ratio of Various Materials



A Comparison is made of dry wear resistance by Suga method among CNC25 and two popular wear resistant materials. CNC25 exhibit high hardness and wear resistance.

(\*1)A specimen reciprocates under load on abrasive paper fixed to a rotating friction ring. The wear of specimen is rated, then, against the base value of substrate(SS400).  
(\*2) plated cermet (CrC/20%NiCr)

### ■Thermal shock test of CNC25



FUJIMI has made a thermal shock test of 3007 and CNC25. A sprayed specimen is placed in a furnace at 1000°C for 30 min, and then immersed in water to produce thermal shocks through 10 cycles of rapid heating and cooling. The surface conditions of the specimen are, then, checked for cracks, warping, separation, etc.

As a result of this test, both coatings were cracked on those surface, but 3007 had networks of more extended cracks on the entire coating. On the other hand, CNC25 were only cracked partially. The side view observes convex warpage, but this phenomenon is less apparent with CNC25D. These results show CNC25 is superior to 3007 in thermal shock resistance.

## Applications

### ■Applications of CNC25

< Coating Characteristics >

- Hot corrosion resistance
- High temperature wear resistance
- Thermal shock resistance

<Applications>

- Gas turbines
- Nuclear parts
- Diesel engine parts
- Boiler heat exchanger tubes
- Furnace rolls

CNC25 is applied in the Iron industry, the chemical industry, the machine industry and the power generation parts with CNC25 Hot corrosion resistance and thermalshock resistance .