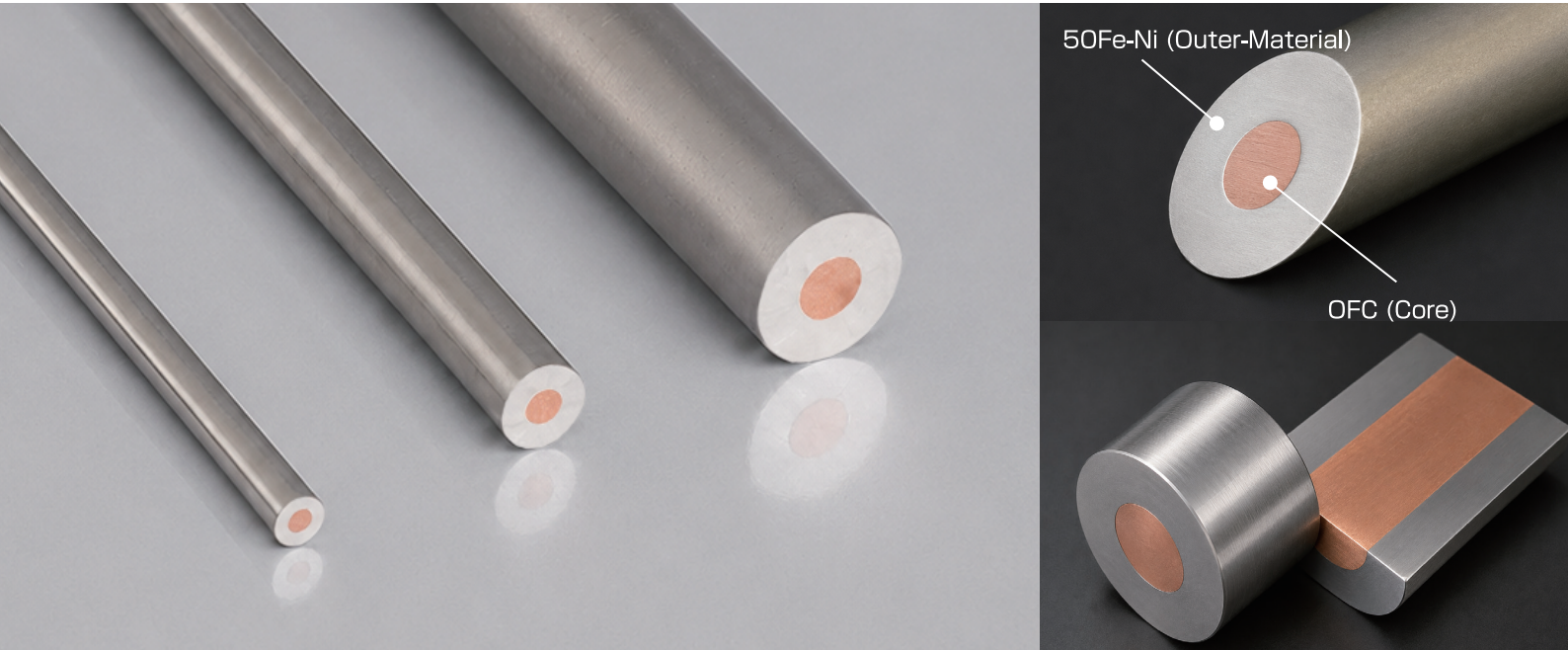


High-Reliability Clad Wire
for Diverse Sealing and Electronic Component Applications

50Fe-Ni
OFC

COPPER-CORE CLAD WIRE



High Hermeticity

Interfacial Reliability
after Sealing



High Electrical Conductivity

OFC Core



High Thermal Conductivity

Enhances Thermal
Management Performance

Manufactured with an oxygen-free copper (OFC) core and a 50Fe-Ni alloy outer-material whose thermal expansion coefficient closely matches that of glass, this clad wire is ideal for components utilizing glass-sealing technology and supports a wide range of high-current applications.

This clad wire, manufactured using KMCT's proprietary process, offers excellent hermeticity and meets the demands for higher performance and downsizing in vacuum components for the electrical and electronics fields as well as industrial vacuum equipment.

Characteristics

01

Thermal Expansion Characteristics Close to Those of Glass

It features a thermal expansion coefficient equivalent to that of glass, while also providing excellent electrical and thermal conductivity.

02

Maintains High Interfacial Reliability Even After Heating to Around 1000°C

With excellent metallurgical bonding, it exhibits no interfacial leakage even after exposure to the approximately 1000°C heat involved in glasssealing processes.

03

Stable Composite Ratio Along the Longitudinal Direction

The composite ratio remains constant along the longitudinal direction.

04

The Composite Ratio Can be Adjusted

The composite ratio can be adjusted, allowing compatibility with ratios from 2:1 to 3:1.

Main Application

Various hermetic seal components

Usage examples:

motor protectors and hermetic feedthrough terminals
(for air conditioners, refrigerators, automobiles, and data-center equipment)

Production Range

Unit	Outside Diameter
Bobbin	Φ0.5~1.5mm
Coil	Φ1.5~5mm
Bar	Further specifications can be discussed separately

Production tolerances and any manufacturing ranges not listed above can be discussed separately.

COPPER-CORE CLAD WIRE (50Fe-Ni/OFC)

50Fe-Ni
OFC

Material Properties

50Fe-Ni/OFC (Composite ratio 2.5 : 1)

A Chemical Composition (specification values) unit:wt%

Material	Cu	O	Ni	C	Mn	S
50Fe-Ni	-	-	48-52	0.02max	0.2-1.0	0.025max
OFC	99.99min	0.001max	-	-	-	-
Material	P	Si	Fe			
50Fe-Ni	0.025max	0.1-0.5	Rest			
OFC	-	-	-			

B. Mechanical Properties (reference values)

Tensile strength (N/mm ²)	50Fe-NiHardness (Hv)	OFCHardness (Hv)
785up	220-270	110-130

C. Electrical Properties (reference values)

Electrical conductivity (%IACS)
19-21

D. Physical Properties (reference values)

50Fe-Ni/OFC Specific gravity
8.48

E. Coefficient of thermal expansion (reference values)

Coefficient of thermal expansion (x10 ⁻⁶ /°C)	
Temperature range (°C)	50Ni-Fe/OFC
25 ~ 100	10.3
25 ~ 200	10.0
25 ~ 300	11.6
25 ~ 400	13.2
25 ~ 500	14.0
25 ~ 600	14.3
25 ~ 700	14.7
25 ~ 800	15.1
25 ~ 900	15.4
25 ~ 1000	15.9