DAIKOWT 409Nb

GTAW

FERRITIC - MARTENSITIC STAINLESS STEEL
409Nb

DESCRIPTION

Ferritic stainless steel rod stabilized with Nb

These rods deposit a ferritic stainless steel weld metal, primarily used for welding 409 and 409Ti base materials. The addition of niobium enhances corrosion resistance, increases high-temperature resistance, and promotes a ferritic microstructure. Niobium is preferred over titanium due to lower oxidation losses in the arc. Not recommended for multi-pass applications. They are used in the homogeneous welding of 12% chromium ferritic steels in applications such as catalytic converters and silencers.

SPECIFICATIONS

EN ISO 14343-B	SS409Nb	**AWS A5.9**	ER409Nb
Shielding	I1	**Positions**	PA, PB, PC, PD, PE, PF
Current	DC-	**Packaging Type**	5kg carton tube

ASME QUALIFICATIONS

F-No (QW432)	6
A-No (QW442)	6

PREN

12.49

CHEM. COMP. %	DEFAULT
C	0.04
Mn	0.65
Ni	0.4
Cr	11.5
P	0.02
S	0.02
Mo	0.3
Si	0.5
Cu	0.16

MECHANICAL PROPERTIES	MIN. PER STANDARD	PRODUCT
Tensile strength R_m MPa	450	460
Yield strength $R_{p0.2}$ MPa	250	350
Elongation A (L_0=5d_0) %	15	26
Impact Charpy ISO-V	-	-
Impact Charpy ISO-V	-	-

WELDING PARAMETERS	1.6 mm	2.4 mm
Ampere	80A - 100A	110A - 160A
Voltage	-	-
Packaging	Ø 1,0÷4,0mm	Ø 1,0÷4,0mm
Packaging Type	5kg carton tube	5kg carton tube

DAIKO

409Nb

DESCRIPTION

APPLICATION

The 409Nb alloy is distinguished from type ER409 by the addition of niobium, which reacts to form niobium carbide (NbC). This feature prevents the formation of chromium carbides (Cr3C2), significantly improving corrosion resistance. Furthermore, niobium increases high-temperature resistance and promotes an optimal ferritic microstructure. The consumables associated with this alloy are ideal for welding 12% Cr ferritic steels, used in critical applications such as manifolds, silencers, catalytic converters, and piping. For optimal results, it is recommended to adopt low heat input welding procedures. However, this material is not recommended for applications requiring multiple welding passes.

ALLOY TYPE

Ferritic stabilized stainless solid welding wire of 12% Cr and 0.4% Nb type.

MICROSTRUCTURE

Ferrite.

MATERIALS

Used for welding similar 12% Cr ferritic steels.
ASTM: 409, 409Ti, 409Nb, 439, 430

WELDING & PWHT

These welding consumables are specifically formulated to optimize weldability and performance in high-stress environments. They ensure a strong bond and maintain the integrity of the welded components, even under fluctuating thermal conditions.