DAIKOWS 409Nb

SAW

FERRITIC - MARTENSITIC STAINLESS STEEL
409Nb

DESCRIPTION

Nb stabilised solid ferritic stainless steel wire rod

These wire rods deposit a ferritic stainless weld metal which is used to weld Type 409 and 409Ti base materials. The addition of niobium improves corrosion resistance, increases strength at high temperature, promotes a ferritic micro-structure. Niobium is used instead of titanium because oxidation losses across the arc generally are lower. Not recommended for multi-pass applications. Consumables used for welding similar 12% Cr ferritic steels in application such as catalytic converters and mufflers.

SPECIFICATIONS

EN ISO 14343-B	SS409Nb	**AWS A5.9**	ER409Nb
Shielding	DAIKOFLUX 493-W	**Positions**	PA, PB, PC
Current	DC/AC	**Packaging Type**	K415 spool and drums.

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	-	-
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WELDING PARAMETERS	2.4 mm
Ampere	250A - 420A
Voltage	28V - 32V
Packaging	Ø 2,0÷4,0mm
Packaging Type	K415 spool and drums.

NOTES

SAW mechanical properties depend on wire/flux combination, refer to flux TDS.

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.