DAIKOWT 625

GTAW

NICKEL ALLOYS
625

DESCRIPTION

Nickel-based alloy 625 rod

Rod for critical environments: withstands high temperatures and ensures structural stability and protection against general corrosion, pitting, crevice corrosion, and stress corrosion cracking in the presence of chlorides. Useful properties guaranteed from -269 °C to over 550 °C. Recommended for welding on 625, 825, 25-6Mo, austenitic and superaustenitic stainless steels, for overlays and for joints on 9% Ni steels or alloys particularly resistant to corrosion (e.g. alloy 20). Widely used in oil and gas production and processing.

SPECIFICATIONS

EN ISO 18274	S Ni 6625	**AWS A5.14**	ERNiCrMo-3
Certifications	CE, TUV	**Shielding**	I1
Positions	PA, PB, PC, PD, PE, PF	**Current**	DC-
Packaging Type	5kg carton tube		

ASME QUALIFICATIONS

F-No (QW432)	43
A-No (QW442)	-

PREN

51.7

CHEM. COMP. %	DEFAULT
C	0.01
Mn	0.01
Ni	65
Cr	22
Nb	3.6
Al	0.01
P	0.003
S	0.001
Mo	9
Si	0.07
Cu	0.02
Fe	0.4
Ti	0.2

MECHANICAL PROPERTIES	MIN. PER STANDARD	PRODUCT
Tensile strength R_m MPa	760*	780
Yield strength $R_{p0.2}$ MPa	0	500
Elongation A (L_0=5d_0) %	0	60
Impact Charpy ISO-V	-	80J @ -196°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS	1.6 mm	2.4 mm
Ampere	80A - 120A	130A - 160A
Voltage	10V - 13V	14V - 18V
Packaging	Ø 1,0÷4,0mm	Ø 1,0÷4,0mm
Packaging Type	5kg carton tube	5kg carton tube

625

DESCRIPTION

APPLICATION

Designed with an optimized composition for the alloy 625, this subfamily is particularly indicated for resisting general corrosion, pitting, crevice corrosion, and stress corrosion cracking in chlorine-rich environments. These features result from high levels of Cr, Mo, and Nb, which not only provide superior mechanical strength but also position this alloy at the top of standard nickel-based alloys. Its properties are maintained over a wide range of temperatures, from -269 °C to over 1000 °C. This alloy is also ideal for welding heat-resistant alloys such as Inconel 601, Incoloy 800/800H, and their combinations with other alloys, typically used in furnace equipment, petrochemical plants, and power plants. Additional applications include: corrosion-resistant weld overlays for alloys such as 825, Hastelloys G and G3, alloy 28, 904L, and superaustenitic stainless steel 6%Mo 254SMo. It is also used for overlays on pumps, valves, and shafts, especially in offshore and marine environments where high pitting resistance (PRE = 50) and good tolerance to dilution are crucial. Perfect for welding on high-strength ferrous alloys, including 9% nickel cryogenic steels, and for refurbishing matrices requiring rapid hardening and robustness. No preheating is required, and the maximum allowed interpass temperature is 250 °C. As for superaustenitic alloys, the interpass temperature must be maintained at a maximum of 100 °C.

ALLOY TYPE

Consumables matching the nickel base 625 alloy with typical composition of Ni-21%Cr-9%Mo-3.5%Nb.

MICROSTRUCTURE

In the as-welded condition this nickel base weld metal consists of solid-solution strengthened austenite with carbides.

MATERIALS

Also suitable to join 9%Ni steels.
EN W.Nr.: 2.4856
ASTM: A494 CW-6MC, 904L
UNS: N06625, S31254
PROPRIETARY: Inconel® 625, 601 (Special Metals), Nicrofer 6020hMo, 6022hMo (VDM), 254SMO (Outokumpu), Incoloy® 800H, 825 (Special Metals)