DAIKOFCW 2594P

FCAW

DUPLEX - SUPERDUPLEX
2507

DESCRIPTION

Rutile all position flux cored wire for 25% Cr superduplex ferritic-austenitic stainless steels

Rutile flux cored wire for welding and cladding in all positions thanks to the fast-freezing slag. The deposit of this rod wire, designed for welding ferritic-austenitic superduplex steels, possess, in addition to high tensile strength and toughness, also excellent resistance to stress corrosion cracking, pitting and to inter-crystalline corrosion. The operating temperature range is -50 °C up to 250 °C. It offers excellent weldability, easy handling and slag control in all positions resulting in high productivity with outstanding welding performance.

SPECIFICATIONS

EN ISO 17633-A	T 25 9 4 N L P C1/M21 1	**AWS A5.22**	E2594T1-1/4
Certifications	CE	**Shielding**	M21, C1
Positions	PA, PB, PC, PD, PE, PF, PG	**Current**	DC+
Packaging Type	BS300 spool		

ASME QUALIFICATIONS

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

PREN

43.1

CHEM. COMP. %	DEFAULT
C	0.03
Mn	1.2
Ni	9.7
Cr	25.9
N	0.25
P	0.02
S	0.005
Mo	4
Si	0.5

MECHANICAL PROPERTIES	MIN. PER STANDARD	PRODUCT
Tensile strength R_m MPa	620	900
Yield strength $R_{p0.2}$ MPa	550	700
Elongation A (L_0=5d_0) %	18	27
Impact Charpy ISO-V	-	40J @ -50°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS	1.2 mm	1.6 mm
Ampere	120A - 240A	200A - 350A
Voltage	20V - 28V	28V - 32V
Packaging	Ø 1,2÷1,6mm	Ø 1,2÷1,6mm
Packaging Type	BS300 spool	BS300 spool

NOTES

D200 spool, Ø 1,0 mm and metal core version available upon request.

DAIKO

2507

DESCRIPTION

APPLICATION

Super duplex stainless steel pipes, plates, fittings, and forgings have a microstructure composed of approximately 50% austenite and 50% ferrite matrix. This combination, along with the alloy composition, offers several key benefits: - high strength compared to standard austenitic steels like type 316L; - excellent overall corrosion resistance in a wide range of environments; - high resistance to chloride-induced stress corrosion cracking (CSCC); - remarkable resistance to pitting attack in environments containing chlorides, such as seawater. These characteristics make super duplex alloys ideal for continuously evolving applications in the **offshore oil/gas, chemical, and petrochemical industry.** They are frequently used in piping systems, flow lines, risers, manifolds, and more.

ALLOY TYPE

25%Cr ferritic-austenitic superduplex stainless steels.

MICROSTRUCTURE

Austenite-ferrite duplex microstructure in AW or solution annealed condition with an approximate 30- 60% ferrite level, depending on heat cycle conditions.

MATERIALS

EN W.Nr.: 1.4410 (X2CrNiMoN25-7-4)
ASTM: A182 F53, A182 F55, A890 Gr5A, A890 Gr6A
UNS: S32750, S32760, J93404
PROPRIETARY: SAF 2507 (Sandvik), Uranus® 47N (Industeel)

WELDING & PWHT

Generally, preheating is not required. The interpass temperature is set to a maximum of 150 °C. A heat input range of 1.0-2.0 kJ/mm, depending on the thickness of the material, is acceptable, with many codes specifying a maximum limit of 1.5 or 1.75 kJ/mm. Although welds on duplex stainless steels are almost always left as-welded, major repairs on castings are generally carried out in a solution-treated condition. Industry practices suggest that excellent mechanical properties can be obtained through water quenching at 1120 °C, held for 3-6 hours.