DAIKOWM 347H

GMAW

AUSTENITIC STAINLESS STEELS
347H

DESCRIPTION

Solid wire for joining 321 and 347 base materials for high service temperature applications

These Cr-Ni consumables are Nb-stabilized for welding steels grades, such as 321 and 347, that are stabilized with Ti or Nb. The presence of Nb reduces intergranular corrosion under severe operation conditions. Also suitable for cladding as on mild steel after a 309 buffer layer. If dilution by the base metal produces a low ferrite or fully austenitic weld metal, the crack sensitivity of the weld may increases substantially. Carbon content in the range of 0.04%-0.08% provides higher strength at elevated temperatures, up to 800°C.

SPECIFICATIONS

EN ISO 14343-A	G 19 9 Nb	**AWS A5.9**	ER347
Shielding	M12, M13	**Positions**	PA, PB, PC, PD, PE, PF, PG
Current	DC+	**Packaging Type**	Drums, B300, D200 and D100 spools.

ASME QUALIFICATIONS

F-No (QW432)	6
A-No (QW442)	8

FERRITE

2-9 FN

PREN

19.83

HARDNESS

84HRB

CHEM. COMP. %

	DEFAULT
C	0.055
Mn	1.5
Ni	10
Cr	19.5
Nb	0.6
P	0.02
S	0.01
Mo	0.1
Si	0.35
Cu	0.07

MECHANICAL PROPERTIES

	MIN. PER STANDARD	PRODUCT
Tensile strength R_m MPa	550	660
Yield strength $R_{p0.2}$ MPa	350	450
Elongation A (L_0=5d_0) %	25	42
Impact Charpy ISO-V	-	100J @ -50°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

	1.0 mm	1.2 mm
Ampere	160A - 220A	200A - 270A
Voltage	25V - 29V	26V - 30V
Packaging	Ø 0,8÷1,6mm	Ø 0,8÷1,6mm
Packaging Type	Drums, B300, D200 and D100 spools.	Drums, B300, D200 and D100 spools.

NOTES

High ferrite version available upon request.

347H

DESCRIPTION

APPLICATION

Material 347H is designed for welding high-carbon 18/8 type stainless steels, specifically titanium-stabilized and niobium-stabilized steels such as 321H and 347H. Its main applications include **catalytic crackers (known as cat crackers), cyclones, transfer lines, furnace components, steam piping, headers for superheaters, and various components of gas and steam turbines**. These are commonly used in petrochemical plants, chemical processes, and power generation industries. It is important to note that alloy 16.8.2 has been developed as a more ductile alternative to 347H consumables, to mitigate problems in the Heat Affected Zone (HAZ) in service, particularly in 347H base materials with thicknesses exceeding 12 mm. Therefore, when welding thicker sections of 321H/347H, 16.8.2 consumables are preferred. For welding 321/347 intended for general applications requiring corrosion resistance up to approximately 400 °C, the use of 347 or 308L consumables is recommended. For cryogenic applications requiring a Charpy lateral expansion greater than 0.38 mm at -196 °C, it is recommended to use an unstabilized, low-carbon filler metal with controlled ferrite. No preheating or Post-Weld Heat Treatments (PWHT) are required, while the maximum interpass temperature is set at 250 °C.

ALLOY TYPE

Controlled, high carbon Nb stabilized stainless steel for elevated temperature service.

MICROSTRUCTURE

Austenite with 2-9FN, typically 4FN (solid wire typically 8FN).

MATERIALS

EN W.Nr.: 1.4941 (X6CrNiTiB18-10), 1.4961 (X8CrNiNb16-13), 1.4878 (X8CrNiTi18-10)
ASTM: 321H, 347H
UNS: S32109, S34709