



DAIKOWT 347H

GTAW

AUSTENITIC STAINLESS STEELS

347H

DESCRIPTION

Solid rod 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 increase substantially. Carbon content in the range of 0.04%-0.08% provides higher strength at elevated temperatures, up to 800°C.

SPECIFICATIONS

ISO 14343-A	W 19 9 Nb	AWS A5.9	ER347
DIN	-	Werkstoff Number	-
Certifications	-	Shielding	11
Positions	PA, PB, PC, PD, PE, PF	Current	DC-

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	VARIANT
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

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

V 01/2024



The information in this datasheet is the result of detailed research and is considered accurate as of the publication date. However, we cannot guarantee its complete accuracy, and it is subject to change without notice. Actual results may vary due to many factors like welding procedures, material composition, temperature conditions, bevel configuration, and specific manufacturing techniques. We accept no liability for any errors or omissions in this datasheet. For the most current information, please visit www.daikowelding.com.





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DESCRIPTION

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APPLICATION

Utilized in welding titanium and niobium stabilized 18Cr/8Ni stainless steel, specifically types 321H and 347H, this method is employed across various components like catalytic crackers, cyclones, transfer lines, furnace parts, steam piping, superheater headers, and gas and steam turbine elements. Its applications span industries including petrochemical, chemical, and power generation. The significance of alloy 16.8.2 cannot be overstated, serving as a more ductile alternative to 347H consumables to prevent in-service Heat-Affected Zone (HAZ) failure in 347H base material exceeding 12mm in thickness. When dealing with thicker sections of 321H/347H, the preferred choice is 16.8.2 consumables. For general corrosion resistance at temperatures up to 400°C, recommended consumables are 347 or 308L. In cryogenic applications (>0.38mm Charpy lateral expansion at -196°C), it is advisable to use unstabilized weld metal. Notably, no preheating or Post Weld Heat Treatment (PWHT) is required, and the maximum interpass temperature is limited to 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.

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