DAIKOWM 308H

GMAW

AUSTENITIC STAINLESS STEELS
308H

DESCRIPTION

Solid wire for 304/304H materials used at elevated temperatures

Wire formulated to match 18-10 austenitic stainless steels for elevated temperature strength. Carbon content in the range of 0.04%-0.08% provides higher strength at elevated temperatures. These consumables are suitable to weld heavy thick (>12mm) of 321H and 347H to avoid typical service HAZ cracking of these grades. Mainly applications include petrochemical and chemical process plant. Typical service temperatures are 400°C to 800°C.

SPECIFICATIONS

EN ISO 14343-A	G 19 9 H	**AWS A5.9**	ER308H
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

2-8 FN

PREN

20.33

CHEM. COMP. %

	DEFAULT
C	0.05
Mn	1.8
Ni	9.5
Cr	20
P	0.015
S	0.002
Mo	0.1
Si	0.4
Cu	0.1

MECHANICAL PROPERTIES

	MIN. PER STANDARD	PRODUCT
Tensile strength R_m MPa	550	590
Yield strength $R_{p0.2}$ MPa	350	420
Elongation A (L_0=5d_0) %	30	44
Impact Charpy ISO-V	-	80J @ 20°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.

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APPLICATION

308H consumables are specifically designed for applications involving unstabilized 18Cr-10Ni austenitic stainless steels, offering high resistance to elevated temperatures and oxidation. These steels and weld metal have a carefully controlled carbon content between 0.04% and 0.08%. The levels of chromium (Cr) and nickel (Ni) in the weld metal are kept low, and the ferrite is regulated to minimize brittleness due to sigma phase formation. Minor elements and impurities, both beneficial and harmful, are controlled to optimize high-temperature properties. It is crucial that these consumables exclude components containing bismuth, ensuring a Bi level below 0.002% as required by API 582 standards. 308H consumables are also recommended for welding stabilized grades 321H or 347H thicker than 12 mm, preventing cracking in the heat-affected zone (HAZ) and low ductile fracture resistance to creep when using 347 weld metal. It is important to note that some standards suggest the use of 16-8-2 type alloys for these steels, including 304H. 308H is widely used in petrochemical and chemical processing plants, particularly in the construction of cyclones and transfer lines used to recirculate the catalyst in catalytic crackers (cat crackers) operating between 400 °C and 815 °C. Preheat is not required; the maximum interpass temperature is 250 °C. No post-weld heat treatment (PWHT) is required.

ALLOY TYPE

High carbon 308 austenitic stainless steels.

MICROSTRUCTURE

Austenite with delta ferrite controlled 2-8FN.

MATERIALS

For 304/304H materials used at elevated temperatures.
EN W.Nr.: 1.4948 (X 6 CrNi 18 11)
ASTM: 304H, A351 Gr CF10, CF8
UNS: S30409