



G-TECH 308H

SMAW

AUSTENITIC STAINLESS STEELS

308H

DESCRIPTION

Rutile-basic coated electrode for 304/304H materials used at elevated temperatures

Its basic-rutile coating ensures an excellent combination of welding performance in all positions, except for vertical down, and a high resistance to cracking providing smooth arc transfer. Excellent weldability with a spatter free arc and self-releasing slag result in a very smooth bead appearance. These products 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

ISO 3581-A	E 19 9 H R 3	AWS A5.4	E308H-16
DIN	-	Werkstoff Number	-
Certifications	-	Shielding	-
Positions	PA, PB, PC, PD, PE, PF	Current	DC+, AC

ASME QUALIFICATIONS

F-No (QW432)	5
A-No (QW442)	8

FERRITE

2-8 FN

PREN

18.83

HARDNESS

-

CHEM. COMP. %

	DEFAULT
C	0.05
Mn	1
Ni	9.5
Cr	18.5
P	0.02
Mo	0.1
Si	0.6
Cu	0.05

MECHANICAL PROPERTIES

	MIN	VARIANT
Tensile strength R _m MPa	550	610
Yield strength R _{p0.2} MPa	350	450
Elongation A (L ₀ =5d ₀) %	30	35
Impact Charpy ISO-V	-	80J @ 20°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

	2.5 mm	3.2 mm	4 mm	
Ampere	50A - 80A	80A - 110A	110A - 150A	160A -
Voltage	-	-	-	
Packaging	56 pcs/kg	28 pcs/kg	19 pcs/kg	12 pcs/kg
Packaging Type	Carton box	Carton box	Carton box	Carton box



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.



V 01/2024



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APPLICATION

The 308H consumables are specifically crafted to match unstabilized 18Cr-10Ni austenitic stainless steels, providing elevated temperature strength and oxidation resistance. Carbon content is controlled within the range of 0.04-0.08%, and weld metal Cr and Ni are kept low to minimize embrittlement by sigma phase. Ferrite is controlled to further mitigate embrittlement, and minor elements and residuals are carefully managed to optimize high-temperature properties. No bismuth-bearing constituents are permitted to ensure compliance with API 582 (<0.002%Bi). Consideration of 308H consumables is advised for welding thick (>12mm) stabilized grades 321H or 347H, preventing in-service HAZ cracking and maintaining creep rupture ductility associated with 347 weld metal. Some authorities recommend type 16-8-2 for these steels, including 304H. Widely used in petrochemical and chemical process plants, especially for fabricating cyclones and transfer lines in catalytic crackers (cat crackers) operating within the range of 400-815°C. No preheat is required, and the maximum interpass temperature is set at 250°C. Post-weld heat treatment (PWHT) is not necessary.

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.

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