



DAIKOWM 310Mo



SUPERAUSTENITIC STEELS

310

DESCRIPTION

Solid wire for 25%Cr-20%Ni stainless steels

The chemical composition has been meticulously adjusted to cater to specific applications within Urea plants, particularly for joining and surfacing alongside steels that closely match or resemble it. Recognized as a 310L modified austenitic stainless steel, it integrates low levels of carbon and silicon, along with heightened nitrogen content, to reinforce and stabilize the austenitic phase. Furthermore, its composition, abundant in chromium, molybdenum, and nitrogen, imparts exceptional resistance in humid corrosive conditions

SPECIFICATIONS

ISO 14343-A	G 25 22 2 N L	AWS A5.9	(ER310Mo)
DIN	-	Werkstoff Number	-
Certifications	CE	Shielding	M12, M13
Positions	PA, PB, PC, PD, PE, PF, PG	Current	DC+

ASME QUALIFICATIONS

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

FERRITE

FERRITE	-
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PREN

PREN	26.33
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HARDNESS

HARDNESS	85HRB
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CHEM. COMP. %

CHEM. COMP. %	DEFAULT
C	0.1
Mn	4.5
Ni	22
Cr	25
N	0.14
P	0.02
S	0.005
Mo	2.2
Si	0.13
Cu	0.1

MECHANICAL PROPERTIES

MECHANICAL PROPERTIES	MIN	VARIANT
Tensile strength R_m MPa	550	560
Yield strength $R_{p0.2}$ MPa	350	360
Elongation A ($L_0=5d_0$) %	20	40
Impact Charpy ISO-V	-	50J @ -196°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

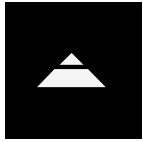
WELDING PARAMETERS	1 mm	1.2 mm
Ampere	160A - 220A	200A - 270A
Voltage	25V - 29V	26V - 30V
Packaging	Ø 0,8÷1,6mm	Ø 0,8÷1,6mm
Packaging Type	Drums, B300, D200 and D100 spools.	Drums, B300, D200 and D100 spools.

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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APPLICATION

Utilized for welding comparable wrought or cast 25%Cr-20%Ni (310) parent alloys with up to 0.25% carbon, this consumable is crafted to maximize resistance to solidification cracking and microfissuring. In the Mn version, the weld metal incorporates a manganese range elevated to 2-5%. The high alloy content of type 310 imparts valuable oxidation resistance, effective up to peak temperatures of approximately 1200°C, making it well-suited for applications like heat shields, furnace parts, and ducting. These consumables are versatile, accommodating mixed welding and dissimilar joints, even those requiring post-weld heat treatment (PWHT). It's important to note that the relatively high thermal expansion coefficient may induce thermal fatigue in transition joints subjected to thermal cycling, leading to a preference for nickel-base consumables in such cases. Additional applications include buffer layers and surfacing. The fully austenitic weld metal is beneficial for specialized applications requiring low magnetic permeability (typically <1.01). 310 weld metals inherently maintain toughness down to -196°C, making them suitable for cryogenic installations. No preheat is required. It is advisable to keep the interpass temperature below 150°C and the heat input below 1.5 kJ/mm, particularly crucial for high heat input processes such as SAW.

ALLOY TYPE

25%Cr-20%Ni (310) stainless steel.

MICROSTRUCTURE

Fully austenitic.

MATERIALS

EN W. N.: 1.4826 (GX40CrNiSi22-10), 1.4828 (X15CrNiSi2012), 1.4837 (GX40CrNiSi25-12), 1.4840 (GX15CrNi2520), 1.4841 (X15CrNiSi25-21), 1.4846 (X40CrNi25-21), 1.4847 (X8CrNiAlTi20-20), 1.4848 (GX40CrNiSi25-20), 1.4335 (X1CrNi25-21), 1.4435 (X2CrNiMo18-14-3), 1.4446 (X1CrNiMoN22-25-3), 1.4547 (X3CrNiMoTi25-25).

ASTM: 310, 310S, CK20, 305, 314, 725LN, 316L.

UNS: S31000, S31008, S31050, S31603.

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