



DAIKOWM D2



HIGH YIELD STRENGTH STEELS
80-90ksi

DESCRIPTION

Low alloy solid wire for high yield strength steels

High strength low alloy steels with improved elevated temperature performance over that of C-Mn steels. Used for the fabrication of vessel and associated pipework demanding creep rupture strength and ductility up to about 450°C. Good toughness at low temperatures.

SPECIFICATIONS

EN ISO 14341-A	G 4Mo	AWS A5.28	ER80S-D2*
Shielding	M20, M21	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)	11

CHEM. COMP. %	DEFAULT	MECHANICAL PROPERTIES	MIN. PER STANDARD	PRODUCT
C	0.08	Tensile strength R _m MPa	550	660
Mn	1.9	Yield strength R _{p0.2} MPa	470	540
Ni	0.05	Elongation A (L ₀ =5d ₀) %	17	23
Cr	0.03	Impact Charpy ISO-V	27J @ -30°C	60J @ -20°C
P	0.01	Impact Charpy ISO-V	-	-
S	0.01			
Mo	0.45			
Si	0.7			
Cu	0.12			
		WELDING PARAMETERS	1.0 mm	1.2 mm
		Ampere	170A - 220A	180A - 300A
		Voltage	24V - 28V	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

* ER90S-D2 available upon request.



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APPLICATION

Low-alloy high-strength steels offer excellent performance at elevated temperatures compared to C-Mn steels, making them ideal for manufacturing pressure vessels and related piping. These materials provide significant resistance to creep rupture and maintain ductility up to about 450 °C, also exhibiting good toughness at low temperatures. They are perfect for the production of high-strength steels intended for use in stress-relief conditions. These consumables, characterized by a low nickel content, are specifically designed for the process piping and fittings of offshore oilwell head, conforming to the requirements of the NACE MR0175 standard. This ensures optimal resistance to sulfide stress cracking in sour environments, combined with good toughness even at subzero temperatures. They are also used for the repair of medium-strength low-alloy steel castings, where only stress-relieving treatment, instead of normalizing and tempering (N+T), needs to be applied. The precise requirements for preheating and post-weld heat treatment (PWHT) depend on the base material to be welded. Typically, preheat/interpass temperatures are between 100 and 250 °C. A PWHT is required.

ALLOY TYPE

Low alloy steel consumables with MnMo additions for welding high strength steels with ultimate tensile strength to 620 MPa (90ksi).

MICROSTRUCTURE

In the stress relieved condition the microstructure consists of tempered bainite.

MATERIALS

EN W.Nr.: P295 G H, P355 G H, 16Mo2, 17Mo3, 14Mo6, S275, S355, S420, S275, S355, S420

ASTM: A 487 Gr 2A, 2B & 2C

