



DAIKOWT D2

GTAW

HIGH YIELD STRENGTH STEELS
80-90ksi

DESCRIPTION

Low-alloy rod for steels with high yield strength

Low-alloy high-strength steels with improved performance at elevated temperatures compared to C-Mn steels. Used for the fabrication of vessels and their piping, ensuring creep rupture resistance and ductility up to approximately 450 °C. Good toughness at low temperatures.

SPECIFICATIONS

EN ISO 14341-A	W 4Mo	AWS A5.28	ER80S-D2*
Shielding	I1	Positions	PA, PB, PC, PD, PE, PF
Current	DC-	Packaging Type	5kg carton tube

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	1.6 mm	2.4 mm
		Ampere	95A - 135A	145A - 205A
		Voltage	-	-
		Packaging	Ø 1,2÷3,2mm	Ø 1,2÷3,2mm
		Packaging Type	5kg carton tube	5kg carton tube

NOTES

* ER90S-D2 available upon request.



The information contained in this technical data sheet is provided for information purposes only, based on data believed to be reliable at the date of publication, and does not constitute a warranty or contractual commitment. Actual performance may vary depending on operating and application conditions; it is the user's responsibility to verify the suitability of the product for the intended application. The manufacturer disclaims any liability for errors, omissions, or improper use. For the latest version, please refer to www.daikowelding.com.



80-90ksi

DESCRIPTION

HIGH YIELD STRENGTH STEELS

80-90ksi

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

