



G-TECH 90G

SMAW

HIGH YIELD STRENGTH STEELS
80-90ksi

DESCRIPTION

Basic coated electrode for high strength low alloy steels

This basic coated welding electrode deposits a low alloyed very tough weld metal with high tensile strength and yield point with a stable arc, regular deposit and easy deslagging. Used to weld steel with tensile strength between 620 and 760 N/mm². During the use adopt preheat, interpass temperature and post weld treatment as required by the base material. Used to join cast steels, pipes, boilers, pressure vessel, bearing frameworks. It can also be used to join fine grain high strength low alloy steels for construction, pressure vessels and pipes.

SPECIFICATIONS

EN ISO 18275-A	E 62 4 1NiMo B 42	AWS A5.5	E9018-G
Shielding	-	Positions	PA, PB, PC, PD, PE, PF
Current	DC+, AC	Packaging Type	Carton box

ASME QUALIFICATIONS

F-No (QW432)	4
A-No (QW442)	3

CHEM. COMP. %	DEFAULT	MECHANICAL PROPERTIES	MIN. PER STANDARD				PRODUCT
C	0.07	Tensile strength R _m MPa	620				730
Mn	1.15	Yield strength R _{p0.2} MPa	620				670
Ni	0.8	Elongation A (L ₀ =5d ₀) %	17				22
Cr	0.05	Impact Charpy ISO-V	47J @ -40°C				70J @ -20°C
P	0.01	Impact Charpy ISO-V	-				50J @ -40°C
S	0.01	WELDING PARAMETERS	2.5 mm	3.2 mm	4.0 mm	5.0 mm	
Mo	0.4		Ampere	70A - 90A	100A - 140A	140A - 180A	180A - 240A
Si	0.6		Voltage	-	-	-	-
Cu	0.1		Packaging	52 pcs/kg	21 pcs/kg	14 pcs/kg	9 pcs/kg
			Packaging Type	Carton box	Carton box	Carton box	Carton box

NOTES

Pcs/kg is indicative, actual number may vary ± 5%.





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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

