



# G-TECH 80G

SMAW

HIGH YIELD STRENGTH STEELS  
80-90ksi

## DESCRIPTION

### Basic coated electrode for high strength low alloy steels

Used for the fabrication of vessel and associated pipework demanding creep rupture strength and ductility up to about 450°C. Its basic coating ensures excellent positional welding characteristics with good gap bridging ability. The weld pool and slag are easy to control and facilitate the achievement of a clean bead surface even in narrow preparations. Ease of slag removal reduces post-welding cleaning operations to a minimum. Good toughness at low temperatures.

## SPECIFICATIONS

EN ISO 18275-A	E 50 6 Mn1Ni B 42	AWS A5.5	E8018-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. %

C	0.07
Mn	1.7
Ni	0.8
Cr	0.03
P	0.01
S	0.01
Mo	0.01
Si	0.6
Cu	0.04

## MECHANICAL PROPERTIES

	MIN. PER STANDARD	PRODUCT
Tensile strength R <sub>m</sub> MPa	550	590
Yield strength R <sub>p0.2</sub> MPa	500	510
Elongation A (L <sub>0</sub> =5d <sub>0</sub> ) %	19	23
Impact Charpy ISO-V	47J @ -60°C	60J @ -60°C
Impact Charpy ISO-V	-	-

## WELDING PARAMETERS

	2.5 mm	3.2 mm	4.0 mm	5.0 mm
Ampere	70A - 90A	100A - 140A	140A - 180A	180A - 240A
Voltage	-	-	-	-
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

