



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

ISO 18275-A	E 50 6 Mn1Ni B 42	AWS A5.5	E8018-G
DIN	-	Werkstoff Number	-
Certifications	-	Shielding	-
Positions	PA, PB, PC, PD, PE, PF	Current	DC+, AC

ASME QUALIFICATIONS	FERRITE	PREN	HARDNESS
F-No (QW432)	4	-	-
A-No (QW442)	3	-	-

CHEM. COMP. %	DEFAULT	MECHANICAL PROPERTIES	MIN	VARIANT
C	0.07	Tensile strength R _m MPa	550	590
Mn	1.7	Yield strength R _{p0.2} MPa	500	510
Ni	0.8	Elongation A (L ₀ =5d ₀) %	19	23
Cr	0.03	Impact Charpy ISO-V	47J @ -60°C	60J @ -20°C
P	0.01	Impact Charpy ISO-V	-	-
S	0.01			
Mo	0.01			
Si	0.6			
Cu	0.04			

WELDING PARAMETERS	2.5 mm	3.2 mm	4 mm	
Ampere	70A - 90A	100A - 140A	140A - 180A	180A -
Voltage	-	-	-	-
Packaging	52 pcs/kg	21 pcs/kg	14 pcs/kg	9 pcs/kg
Packaging Type	Carton box	Carton box	Carton box	Carton box

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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

Recommended for high-strength low-alloy steels with a minimum yield strength of up to 540MPa, these consumables offer enhanced elevated temperature performance compared to CMn steels. They are employed in fabricating vessels and associated pipework, catering to the demand for exceptional creep rupture strength and ductility, as high as 450°C. Demonstrating good toughness at low temperatures, they are ideal for crafting higher-strength steels intended for stress-relieved conditions. Specifically designed for offshore oil well-head process pipework and fittings, these low-nickel consumables meet NACE MRO175 requirements (<1% Ni & <22 HRC), ensuring resistance to sulphide-induced stress corrosion cracking in sour service, coupled with impressive sub-zero toughness. Additionally, they find utility in repairing medium-strength, low-alloy steel castings, especially in cases where stress relief alone (rather than normalizing and tempering) is applied. The actual preheat and post-weld heat treatment (PWHT) specifications hinge on the base material being welded, typically falling within the range of 100-250°C for preheat/interpass temperatures, with PWHT being a mandatory step in these applications.

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.

