



# G-TECH 120

SMAW

HIGH YIELD STRENGTH STEELS  
120ksi

## DESCRIPTION

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

Basic electrode with excellent welding characteristics, recommended for welding fine grained similar alloyed high yield strength steel (< 900 Mpa) in case high impact values are required at sub zero temperatures. These materials are used in lifting and handling machines, bridges, tanks, transports, shipbuilding, railway sector, mines, frames, crane fabrication, trailer construction, and other structural applications involving higher strength materials. Hydrogen content HD < 4 ml/100 g.

## SPECIFICATIONS

EN ISO 18275-A	E 79 5 Mn2Ni1CrMo B 42 H5	AWS A5.5	E12018-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)	-

CHEM. COMP. %	DEFAULT	MECHANICAL PROPERTIES	MIN. PER STANDARD	PRODUCT		
C	0.09	Tensile strength R <sub>m</sub> MPa	830	900		
Mn	1.8	Yield strength R <sub>p0.2</sub> MPa	790	800		
Ni	2.3	Elongation A (L <sub>0</sub> =5d <sub>0</sub> ) %	16	18		
Cr	0.9	Impact Charpy ISO-V	47J @ -50°C	60J @ -50°C		
Mo	0.5	Impact Charpy ISO-V	-	-		
Si	0.5					
		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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# 120ksi

DESCRIPTION

HIGH YIELD STRENGTH STEELS

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## APPLICATION

This category of consumables is designed for applications requiring a minimum tensile strength of 120 Ksi and high performance in terms of Charpy V-notch resilience. They are commonly used in industries that include lifting and handling machinery, bridge construction, tank manufacturing and transportation, as well as shipbuilding, railway, mining industries, frames, crane construction, and trailers, as well as other high-strength structural applications. It is essential to provide preheating based on the base material and thickness. However, higher strength consumables normally require at least a 100 °C preheat. In some HSLA steels, it is important to note that interpass temperatures above 200 °C may reduce both material strength and toughness. Post welding heat treatment (PWHT) is generally determined by the base material and the specific application.

## ALLOY TYPE

Mn-Ni-Mo low alloy consumables for welding high strength steels with ultimate tensile strength up to 825 MPa (120 ksi).

## MICROSTRUCTURE

The microstructure of all the consumables is predominantly ferrite; some will contain high proportions of acicular ferrite for optimum as-welded toughness

## MATERIALS

This material is used for a variety of high strength steels. HY-80, HY-90, HY-100. S890 and higher strength grades, thermo mechanically treated fine grain steels.

**EN W.Nr.:** S890QL, S960Q

**ASTM:** A 709 Gr. 100 Type B, E, F, H, Q, HPS 100W

**PROPRIETARY:** Strenx® 900 (SSAB), Alform® 900 X-treme (voestalpine)

