DAIKOWT 120

GTAW

HIGH YIELD STRENGTH STEELS
120ksi

DESCRIPTION

Low-alloy rod for steels with high yield strength

Medium alloy high-strength solid rod for protected arc welding of fine-grained quenched and tempered structural steels. Designed for applications requiring a minimum tensile strength of 120 MPa and good Charpy V-notch impact toughness to weld HY-80, HY-100, Strenx® 900, S890QL, and S960Q. These materials are used for lifting and handling machinery, bridges, tanks, shipbuilding, railway sector, mining, frames, crane and trailer construction, as well as other structural applications demanding high-strength materials.

SPECIFICATIONS

EN ISO 16834-A	W 89 4 Mn4Ni2,5CrMo	**AWS A5.28**	ER120S-G
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)	-

CHEM. COMP. %	DEFAULT
C	0.11
Mn	1.9
Ni	2.4
Cr	0.6
P	0.01
S	0.01
Mo	0.6
Si	0.8
Cu	0.15

MECHANICAL PROPERTIES	MIN. PER STANDARD	PRODUCT
Tensile strength R_m MPa	940	980
Yield strength $R_{p0.2}$ MPa	890	890
Elongation A (L_0=5d_0) %	15	16
Impact Charpy ISO-V	-	60J @ -40°C
Impact Charpy ISO-V	-	-

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

DAIKO

120ksi

DESCRIPTION

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)