



DESCRIPTION

Low alloy solid wire for high yield strength steels

High strength low alloy submerged arc welding wire with improved elevated temperature performance over that of C-Mn steels. Used for the fabrication of vessel and associated pipework demanding creep rupture strength and ductility up to about 450°C. Good toughness at low temperatures.

SPECIFICATIONS

ISO 14171-A	S4Mo	AWS A5.23	EA3
DIN	-	Werkstoff Number	-
Certifications	-	Shielding	DAIKOFLUX 490-W, 491-W
Positions	PA, PB, PC	Current	DC/AC

ASME QUALIFICATIONS

F-No (QW432)	6
A-No (QW442)	3

FERRITE

-

PREN

-

HARDNESS

-

CHEM. COMP. %

DEFAULT

C	0.07
Mn	1.6
Ni	0.06
Cr	0.08
P	0.01
S	0.01
Mo	0.4
Si	0.6
Cu	0.15

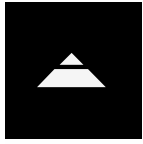
MECHANICAL PROPERTIES

	MIN	VARIANT
Tensile strength R _m MPa	-	640
Yield strength R _{p0.2} MPa	-	510
Elongation A (L ₀ =5d ₀) %	-	22
Impact Charpy ISO-V	-	70J @ -20°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

	2.4 mm	3.2 mm	4 mm
Ampere	350A - 450A	430A - 530A	480A - 580A
Voltage	27V - 31V	27V - 31V	28V - 32V
Packaging	Ø 2,0÷4,0mm	Ø 2,0÷4,0mm	Ø 2,0÷4,0mm
Packaging Type	K415 spool and drums. K415 spool and drums. K415 spool and drums.		





80-90ksi

DESCRIPTION

HIGH YIELD STRENGTH STEELS

80-90ksi

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.

