



DAIKOWS S3NiMo



HIGH YIELD STRENGTH STEELS

100ksi

DESCRIPTION

Low alloy solid wire for high yield strength steels

Low-alloy copper-coated submerged arc welding wire with Ni-Mo additions designed for welding high yield strength steels and with tensile strength higher than 700 MPa. Good impact strength at low temperatures. Suitable for the metal working industry, offshore fabrication, chemical and petrochemical industry. It also has applications in fabrications of high strength low-alloy steels, which may be used for industrial machinery construction, cranes and other highly stressed structural components.

SPECIFICATIONS

ISO 26304-A	S3Ni1Mo	AWS A5.23	EF3
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)	-

FERRITE

-

PREN

-

HARDNESS

-

CHEM. COMP. %

DEFAULT

C	0.11
Mn	1.8
Ni	1
Cr	0.03
P	0.005
S	0.002
Mo	0.5
Si	0.2
Cu	0.03

MECHANICAL PROPERTIES

	MIN	VARIANT
Tensile strength R_m MPa	-	670
Yield strength $R_{p0.2}$ MPa	-	570
Elongation A ($L_0=5d_0$) %	-	22
Impact Charpy ISO-V	-	80J @ -40°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.		

V 01/2024



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

Exhibiting commendable impact strength at low temperatures, this filler material is well-suited for welding high-strength low-alloy (HSLA) used in cranes and earthmoving equipment. Applications extend to offshore fabrication and the chemical and petrochemical industry, where the precise addition of micro-alloying elements ensures excellent ductility and crack resistance despite the high strength. Preheating requirements depend on the base material and thickness, often mandating a minimum preheat of 100°C. Caution is warranted with certain HSLA steels, as interpass temperatures exceeding 200°C may lead to a reduction in strength and toughness. Post-weld heat treatment (PWHT) requirements are generally dependent on the specific base material and application. This filler material's composite properties offer a blend of durability, weldability, and machinability, making it an ideal choice for manufacturing diverse mechanical components.

ALLOY TYPE

Mn-Ni-Mo low alloy consumables for welding high strength steels with ultimate tensile strength to 690 MPa (100ksi).

MICROSTRUCTURE

Predominantly ferrite; some will contain high proportions of acicular ferrite for optimum as welded toughness.

MATERIALS

For joining of quenched and tempered and thermomechanically rolled fine-grained structural steels. For use in building, crane and vehicle constructions.

EN W.Nr.: S460, S500, S550, S620, S620Q, S620QL, S620QL1, S690Q, S690QL, S690QL1, S600MC, S650MC, S700MC, L690M, L830M.

ASTM: A 514 Gr. F, H, Q, A 709 Gr. 100 Type B, E, F, H, Q, A 709 Gr. HPS 100W.

API: 5L X65, 5L X70, 5L X80+

PROPRIETARY: N-A-XTRA® M 700 (ThyssenKrupp), Strenx® 700 (SSAB).

