

2507XKS

BASIC PIPE-WELDING MMA ELECTRODE FOR SUPERDUPLEX STEELS

PRODUCT DESCRIPTION

Basic coated all-positional MMA electrode for welding superduplex alloys for service in the as-welded condition. This electrode is overmatching with respect to nickel content to achieve correct austenite-ferrite microstructural phase balance. It is designed for the most demanding vertical and overhead welding positions such as fixed pipework qualified in the ASME 5G/6G position, and for applications requiring the highest toughness.

Recovery is about 105% with respect to core wire, 65% with respect to whole electrode.

SPECIFICATIONS

AWS A5.4M	E2594-15
BS EN ISO 3581	E 25 9 4 N L B 4 2

ASME IX QUALIFICATION

QW432	F-No 5
QW442	A-No--

WELDING POSITIONS (ISO/ASME)



PA/1G

PB/2F

PC/2G

PF/3Gu

PE/4G

CHEMICAL COMPOSITION (WELD METAL WT %)

	C	Mn	Si	S	P	Cr	Ni	Mo	Cu	N	PRE _N
min.	--	0.5	--	--	--	24.0	8.5	3.5	--	0.20	40
max.	0.04	2.0	1.0	0.02	0.03	26.0	10.5	4.5	0.5	0.30	46
Typical	0.03	1	0.5	0.01	0.02	25	9.5	3.8	0.1	0.22	41

ALL-WELD MECHANICAL PROPERTIES

As welded	Min.	typical	>1120°C/>3h + WQ transverse *
Tensile strength [MPa]	800	870	>760
0.2% proof strength [MPa]	550	700	--
Elongation (%) 4d	22	28	--
5d	18	25	--
Reduction of area %	--	45	--
Impact ISO-V(I) +20°C	--	85	--
-50°C	--	60	>80
-75°C	--	35	--
Hardness [HV]	--	280-330	<300

* Representative properties for solution treated welds in castings of ASTM A890 grade 5A. Ferrite >30%.

OPERATING PARAMETERS, DC +VE

Diameter (mm)	2.5	3.2	4.0	5.0
min. A	50	70	100	130
max. A	75	95	155	190

PACKAGING DATA

Diameter (mm)	2.5	3.2	4.0	5.0
Length (mm)	300	350	350	350
kg/carton	12.0	13.5	13.5	13.5
Pieces/carton	669	420	267	165

STORAGE

3 hermetically sealed ring-pull metal tins per carton, with unlimited shelf life.

Direct use from tin is satisfactory for longer than a working shift of 8h.

Excessive exposure of electrodes to humid conditions will cause some moisture pick-up and increase the risk of porosity.

For electrodes that have been exposed:

Redry 200 – 300°C/1-2h to restore to as-packed condition. Maximum 400° C, 3 cycles, 10h total.

Storage of redried electrodes at 50 – 200°C in holding oven or heated quiver: no limit, but maximum 6 weeks recommended.

Recommended ambient storage conditions for opened tins (using plastic lid): < 60% RH, > 18°C.

FUME DATA

Fume composition, wt % typical:

Fe	Mn	Ni	Cr	Cu	Mo	V	F *	OES (mg/m ³)
7	6	1	7	0.5	0.2	<0.1	16	0.7

* F = 28% for basic coated 2507XKS electrode but this does not affect the OES.