ULTRAMET 2205

RUTILE ALL-POSITIONAL MMA ELECTRODE FOR 22%Cr DUPLEX STEELS

PRODUCT DESCRIPTION

MMA electrode made on duplex stainless steel core wire with a rutile flux system designed to give minimum carbon content coupled with optimum operating characteristics. The electrode has a rutile flux system optimised for all welding positions except vertical down and provides excellent operability.
Recovery is about 120% with respect to core wire, 65% with respect to whole electrode.

SPECIFICATIONS

AWS A5.4M	E2209-16
BS EN ISO 3581	E 22 9 3 N L R 3 2

ASME IX QUALIFICATION

QW432	F-No 5
QW442	A-No 8

WELDING POSITIONS (ISO/ASME)

CHEMICAL COMPOSITION (WELD METAL WT %)

	C	Mn	Si	S	P	Cr	Ni	Mo	Cu	N	PRE_N
Min.	--	0.5	0.3	--	--	22.0	8.5	2.8	--	0.14	34
Max.	0.03	2.0	0.90	0.02	0.03	23.5	10.0	3.5	0.5	0.2	38
Typical	0.02	1	0.7	0.01	0.02	23.2	9	3.2	0.1	0.17	36

ALL-WELD MECHANICAL PROPERTIES

As welded		Min.	typical
Tensile strength (MPa)		690	850
0.2% proof strength (MPa)		480	675
Elongation (%)	4d	20	27
	5d	20	25
Reduction of area %		--	40
Impact ISO-V(J)	+20°C	--	> 54 (> 0.8)
	-20°C	--	43-48 (> 0.5)
	-50°C	--	32-41 (>0.38)
Hardness (HRC)	HV10	--	< 305 (< 28)

TYPICAL OPERATING PARAMETERS, DC +VE OR AC (OCV: 50V MIN)

Diameter (mm)	2.5	3.2	4.0	5.0
min. A	60	75	100	130
max. A	90	120	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	654	378	249	174

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 380° 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	Cr	Ni	Mo	Cu	F *	OES (mg/m³)
7	6	6	1	0.2	<0.2	16	0.8

* F = 28% for basic coated 2205XKS but this does not affect OES.