

ULTRAMET 308LCF

MMA (SMAW)

RUTILE MMA ELECTRODE FOR CRYOGENIC 304L APPLICATIONS

PRODUCT DESCRIPTION

MMA electrode – special rutile flux coated 308L electrode on high purity 304L core wire. Versatile downhand and positional capability, **Ultramet 308LCF** has a controlled composition and ferrite content designed for cryogenic service requiring >0.38mm lateral expansion at minus 130-196°C. Also suitable for unusual occasions when 304L is specified for service up to 550°C and corrosion conditions preclude the use of 308H.

Recovery is about 110% with respect to core wire, 65% with respect to the whole electrode.

CLASSIFICATIONS

AWS A5.4M	E308L-16
ISO 3581	E 19 9 L R 3 2

ASME IX QUALIFICATION

QW432	F-No 5
QW442	A-No 8

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	FN
Min.	--	0.5	--	--	--	18.0	9.0	--	--	2
Max.	0.04	2.0	0.90	0.025	0.030	21.0	11.0	0.50	0.5	5
Typical	<0.025	1	0.6	0.01	0.02	18.5	10	0.1	<0.1	3

ALL-WELD MECHANICAL PROPERTIES

As welded	Min.	Typical
Tensile strength (MPa)	520	600
0.2% proof strength (MPa)	320	445
Elongation (%) 4d	35	50
5d	30	46
Reduction of area (%)	--	43
Impact ISO*-V(J) -100°C	--	45
-196°C	--	35
Lateral expansion* (mm) -196°C	0.38	0.50

* Batch tested for Charpy lateral expansion >0.38mm at -196°C

TYPICAL OPERATING PARAMETERS, DC +VE ONLY

Diameter (mm)	2.5	3.2	4.0	5.0
min. A	60	75	100	130
max. A	90	120	155	210

PACKAGING DATA

	Diameter (mm)	Length (mm)	Item number	No of pieces		Weight (kg)	
				can	box	can	box
METAL CAN	2.5	300	UM308LCF-25	209	627	3.8	11.4
	3.2	350	UM308LCF-32	125	375	4.3	12.9
	4.0	350	UM308LCF-40	86	258	4.4	13.2
	5.0	450	UM308LCF-50	53	159	5.4	16.2

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

FUME DATA (WT % TYPICAL)

Fe	Mn	Cr	Ni	Mo	Cu	F *	OES (mg/m³)
8	5	5	0.8	-	< 0.2	16	1

* F=28% for basic coated Ultramet B308LCF but this does not affect the OES