

# ULTRAMET B316L

## BASIC COATED MMA PIPE-WELDING ELECTRODE FOR 316L

### PRODUCT DESCRIPTION

MMA electrode – designed and manufactured to give high moisture resistance using a basic flux system and high purity 304L core wire. **Ultramet B316L** is particularly suited to the most demanding vertical and overhead welding applications including fixed pipework in the ASME 5G/6G position. Under site conditions it is tolerant to adverse wind and drafts. Recovery is about 110% with respect to core wire, 65% with respect to whole electrode.

### SPECIFICATIONS

AWS A5.4M E316L-15  
BS EN ISO 3581 E 1912 3 L B 42

### 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	--	--	--	17.0	11.0	2.0	--	3
Max.	0.04	2.0	0.90	0.025	0.030	20.0	13.0	3.0	0.5	10
Typical	<0.03	1.2	0.3	0.01	0.02	19	12	2.6	<0.1	6

### ALL-WELD MECHANICAL PROPERTIES

As welded	Min.	Typical
Tensile strength (MPa)	520	600
0.2% proof strength (MPa)	320	470
Elongation [%] 4d	30	37
5d	25	33
Reduction of area %	--	50
Impact ISO-V(J) +20°C	--	80
-196°C	--	45
Lateral expansion * (mm) -196°C	0.38	0.5

\* See data sheet B-38 for as-welded cryogenic applications 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)	2.5	3.2	4.0	5.0
Length (mm)	300	350	350	450
kg/carton	12.0	13.5	13.5	16.5
Pieces/carton	681	396	261	159

### 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	Cr	Ni	Mo	Cu	F	OES (mg/m <sup>3</sup> )
8	7	5	1	0.5	< 0.2	28	1