

SUPERMET 316L

MMA (SMAW)

GENERAL PURPOSE RUTILE 316L MMA ELECTRODE

PRODUCT DESCRIPTION

MMA electrode – rutile aluminosilicate flux on high purity 304L core wire giving very low typical carbon level. 'Low hydrogen' manufacturing technology ensures high resistance to weld metal porosity. 'Supermet Technology' gives acid rutile operability combined with controlled silicon content for maximum cracking/corrosion resistance. Designed for ease of use, exceptional weld bead appearance and high weld metal integrity, primarily in the downhand and HV positions; smaller sizes offer all-positional operability. Recovery is about 115% with respect to core wire, 65% with respect to the whole electrode.

CLASSIFICATIONS

AWS A5.4M	E316L-17
ISO 3581	E 19 12 3 L R 3 2
Approvals	TÜV

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	0.02	0.8	0.6	0.01	0.02	19	12	2.7	0.1	6

* DIN G require Mo 2.5 – 3.0%.

ALL-WELD MECHANICAL PROPERTIES

Typical values	Min.	As welded	1050°C + WQ
Tensile strength (MPa)	520	600	550
0.2% proof strength (MPa)	320	480	320
Elongation (%) 4d	30	42	52
5d	25	39	49
Reduction of area %	--	60	52
Impact ISO* -V(J) +20°C	--	70	--
-196°C	--	--	35

* See data sheet B-38 for as-welded cryogenic applications at –196°C

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

Diameter (mm)	2.0	2.5	3.2	4.0	5.0
min. A	50	60	75	100	130
max. A	70	90	120	155	210

PACKAGING DATA

	Diameter (mm)	Length (mm)	Item number	No of pieces		Weight (kg)	
				can	box	can	box
METAL CAN	2.0	300	SM316L-20	296	888	3.5	10.5
	2.5	300	SM316L-25	204	612	3.7	11.1
	3.2	350	SM316L-32	122	366	4.3	12.9
	4.0	450	SM316L-40	78	234	5.3	15.9
	5.0	450	SM316L-50	53	159	5.6	16.8

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	7	5	1	0.5	< 0.2	16	1

* F=28% for basic coated Ultramet B316L but this does not affect the OES.

All information in this data sheet is accurate to the best of our knowledge at the time of printing. Please refer to www.specialalloys.eu for any updated information.