

## SUPERCORE 316LCF

FCAW

LOW ALLOY STEELS

## RUTILE ALL-POSITIONAL FLUX CORED WIRE FOR CRYOGENIC 316L APPLICATIONS

## PRODUCT DESCRIPTION

Supercore 316LCF has a controlled composition and ferrite content designed for cryogenic service requiring >0.38mm lateral expansion at minus 130-196°C.

Supercore 316LCF is designed for all-positional welding including fixed pipework. Metal recovery is about 90% with respect to the wire.

## CLASSIFICATIONS

AWS A5.22M	E316LT1-1/4J
ISO 17633-A	[T 19 12 3 L P C/M 2] Nearest classification
ISO 17633-B	TS316L-F C1/M211

## ASME IX QUALIFICATION

QW432	F-No 6
QW442	A-No 8

## CHEMICAL COMPOSITION (WELD METAL WT %)

	C	Mn	Si	S	P	Cr	Ni	Mo *	Cu	FN
Min.	--	0.5	0.2	--	--	17.0	11.0	2.0	--	2
Max.	0.04	2.0	1.0	0.025	0.030	20.0	13.0	3.0	0.5	5
Typical	0.03	1.4	0.6	0.01	0.02	18.0	12.4	2.2	0.1	3

\* Does not conform to ISO 17633-A which requires Mo 2.5 – 3.0%.

## ALL-WELD MECHANICAL PROPERTIES

As welded	Min.	Typical
Tensile strength [MPa]	510	550
0.2% proof strength [MPa]	320	410
Elongation [%] 4d	30	40
5d	25	38
Reduction of area %	--	45
Impact ISO-V(J) +20°C	--	75
-130°C	--	45
-196°C	--	34
Lateral expansion * [mm] -130°C	--	0.70
-196°C	0.38	0.55

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

## OPERATING PARAMETERS

Shielding gas: 80%Ar-20%CO<sub>2</sub> or 100% CO<sub>2</sub> at 20-25l/min. Proprietary gases may be used but argon should not exceed 85%.

Current: DC+ve ranges as below for Ar-20%CO<sub>2</sub>. Welding with 100%CO<sub>2</sub> requires approx 3V higher:

Diameter (mm)	amp-volt range	typical	stickout
1.2	120 – 280A, 22 – 34V	180A, 29V (downhand)	15 – 20mm
	150A, 25V (positional)	160A, 26V	

## PACKAGING DATA

Diameter (mm)	Weight (kg)	Packaging	Item number
1.2	15	S300	SC316LCF-12

## FUME DATA (WT % TYPICAL)

Fe	Mn	Ni	Cr <sup>3</sup>	Cr <sup>6</sup>	Cu	F	OES (mg/m <sup>3</sup> )
14	12	2.5	4	4	<1	5	1.2

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](http://www.specialalloys.eu) for any updated information.