

Prepared by	Qualified by	Approved by	Reg no	Cancelling	Reg date	Page
Per-Ake Bjornstedt	P-O Oskarsson	Per-Ake Bjornstedt	EN008876	EN008809	2020-01-20	1 (2)

REASON FOR ISSUE

Product name and Classification amended.

GENERAL

19.9.L is used for MIG/MAG welding, and is suitable for joining stainless steels of the 18Cr/8Ni/ELC and 18Cr/8Ni/Nb types for service temperatures up to 350°C (660 F). 19.9.L is approved by TÜV-Rheinland for use at cryogenic temperatures down to 4°K (-269°C).

Shielding Gas: M12, M13 (EN ISO 14175)

Alloy Type: Austenitic (with approx. 8 % ferrite) 19% Cr - 9% Ni - Low C

CLASSIFICATIONS Wire Electrode

EN ISO 14343-A G 19 9 L
SFA/AWS A5.9 ER308L
Werkstoffnummer 1.4316

APPROVALS

CE EN 13479
DB 43.039.01
VdTÜV 01339

CHEMICAL COMPOSITION

All Weld Metal (%) Wire/Strip (%)

	Max	Nom	Min	Max	Nom
C	0.02	0.012		0.025	0.010
Si		0.3	0.2	0.6	0.4
Mn		1.6	1.4	2.1	1.9
P		0.018		0.025	0.020
S		0.011		0.015	0.009
Cr		19.9	19.5	21	20
Ni		10	9.0	11.0	10
Mo		0.1		0.5	0.2
Co		0.06		0.20	0.10
Nb		0.01		0.05	0.01
Cu		0.09		0.3	0.2
Ti		0.003			0.003
N		0.07	0.04	0.08	0.05
FN WRC-92		9			9

MECHANICAL PROPERTIES OF WELD METAL

All Weld Metal

Properties	As welded	
	Min	Typ
Rp0.2 (MPa)	320	390
Rm (MPa)	520	600
A5 (%)	35	35
Charpy V at 20°C (J)		135
Charpy V at -196°C (J)		50
Charpy V at -296°C (J)		40

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ECONOMICS & CURRENT DATA

Dimension (mm)	Current (A)		W	η	H		Feed		U	
\emptyset	Min	Max	Nom	Nom	Min	Max	Min	Max	Min	Max
0.8	40	120	12.0				4	8	15	19
1.0	60	220	12-18				4	12	15	28
1.2	150	260	18.0				3	10	24	29
1.6	230	350	18.0				3	5	25	30

W = Gas consumption (l / min)

η = Recovery, g weld metal / 100g wire (%)

H = Deposit rate (kg weld metal / hour arc time)

Feed = Feeding rate (m/min)

U = Arc voltage (V)

OTHER DATA

CORROSION PROPERTIES: 19.9.L has good resistance to general corrosion and due to its low carbon content, good resistance to intercrystalline corrosion. It also has good resistance to oxidizing agents.

Example: Huey test for MIG weld metal (5 x 48 hours in boiling 65% HNO₃). Rate of corrosion mean value, 0.11 mm/year.

RECOMMENDED WELDING DATA:

Electrode positive is used to give good penetration in all types of welded joint.

Exaton can provide recommendations for shielding gases.

Short-arc welding is used with light gauge material of less than about 3 mm, in depositing root runs, and in welding out-of-flat positions.

The higher the inductance in short-arc welding, the higher the fluidity of the molten pool.

Spray-arc welding is normally used for heavier gauge material.

WELD METAL CHARACTERISTICS: Austenitic microstructure with ferrite number 10FN according to the WRC-1992 (based on aim analysis).