

Outershield® 19-H

CLASSIFICATION

AWS A5.29	E 81T1-B2M-H4	A-Nr	3
ISO 17634-A	T CrMo1 P M 2 H5	F-Nr	6
		9606 FM	3

GENERAL DESCRIPTION

All position mix gas shielded 1.25% Cr 0.5% Mo-alloyed rutile cored wire
 Superior weldability, low spatter, good bead appearance
 Outstanding operator appeal
 Superior product consistency with optimal alloy control
 Excellent wire feeding

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PF/3Gu



PE/4G

CURRENT TYPE / SHIELDING GAS (ISO 14175)

DC +
 M21 : Mixed gas Ar+ (>15-25%) CO₂
 Flow rate : 15-25 l/min

APPROVALS

Shielding gas	TÜV
M21	+

CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

Shielding gas	C	Mn	Si	P	S	Cr	Mo	HDM
M21	0.07	0.74	0.24	0.013	0.010	1.24	0.52	3 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Shielding gas	Condition	Yield strength [N/mm ²]	Tensile strength [N/mm ²]	Elongation [%]	Impact ISO-V[J]	
						+20°C	-20°C
Required: AWS A5.29		SR ⁽¹⁾	min. 470	550-690	min. 19	not required	
ISO 17634-A		SR ⁽²⁾	min. 355	min. 510	min. 20	min. 47	
Typical values	M21	SR ⁽³⁾	545	635	21	150	80

Stress relieving: SR⁽¹⁾ = 690 ± 15°C/1h, SR⁽²⁾ = 660-700°C/1h, SR⁽³⁾ = 1h/690°C

PACKAGING AND AVAILABLE SIZES

Diameter [mm]	1.2
15 kg spool B300	X

Outershield® 19-H: rev. C-EN25-01/02/16

All information in this data sheet is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.eu for any updated information.
 Fumes: Safety Data Sheets (SDS) are available on our website.

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EXAMPLES OF MATERIALS TO BE WELDED

Steel grades/Standard	Type
Creep resistant steels	
EN 10028-2	13CrMo4-5 & similar alloys
EN 10083-1	25CrMo4 & similar alloys
EN 10222-2	14CrMo4-5 & similar alloys
ASTM A387	Grade 11 & 12
ASTM A182	Grade F1 & F12
ASTM A217	Grade WC6 & WC11
ASTM A234	Grade WP11 & WP12
ASTM A199	Grade T11
ASTM A200	Grade T11
ASTM A213	Grade T11 & T12
ASTM A335	Grade P11 & P12
Tool steel	
DIN 17210	16MnCr5 & similar alloys

CALCULATION DATA

Diameter (mm)	Electrical stick-out (mm)	Wire Feed Speed (cm/min)	Current (A)	Arc Voltage (V)	Deposition rate (kg/h)	kg wire/kg weldmetal
1.2	20	445	130	20-22	1.6	1.20
		700	180	23-25	2.5	1.20
		950	220	25-27	3.4	1.20
		1270	265	27-29	4.5	1.20
		1590	305	30-32	5.9	1.20

WELDING PARAMETERS, OPTIMUM FILL PASSES IN SHIELDING GAS Ar + (>15-25)% CO₂

Diameter (mm)	Welding positions				
	PA/1G	PB/2F	PC/2G	PF/3Gup	PE/4G
1.2	230-280A 26-32V	230-280A 26-32V	200-240A 25-32V	200-240A 25-28V	160-220A 23-28V

FCAW

REMARKS/APPLICATION ADVICE

Recommended preheat temperature: 200 - 250°C
 Recommended tempering heat treatment range: 660-700°C
 Time depends on material thickness