

Outershield® MC710-H

CLASSIFICATION

AWS A5.18/A5.18M - A5.36/A5.36M : E70C-6M H4
 EN ISO 17632-A : T 46 3 M M 2 H5 (Ø1.2 and 1.6 mm) / T 46 2 M M 2 H5 (Ø2.0 and 2.4 mm)

GENERAL DESCRIPTION

All position high efficiency gas shielded metal cored wire
 Excellent arc characteristics give outstanding operator appeal
 Very few silicates, virtually no spatter, fast travel speed, excellent wire feeding
 Superior on scaled plate, good resistance to porosity
 Very good mechanical properties [CVN >47J at -30°C]
 Superior product consistency with optimal alloy control

WELDING POSITIONS (ISO/ASME)



CURRENT TYPE / SHIELDING GAS (ISO 14175)

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

APPROVALS

Shielding gas	ABS	BV	DB	DNV	GL	LR	RINA	RMRS	TÜV
M21	3YSAH5	SA3YMH5	+	IIIYMS(H5)	3YH55	3YSH5	3Y5	3YSH5	+

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

Shielding gas	C	Mn	Si	P	S	HDM
M21	0.05	1.35	0.6	0.015	0.023	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	-29°C/-30°C	-40°C
Required: AWS A5.18 EN ISO 17632-A (1.2-1.6)			min. 400 min. 460	min. 480 530-680	min. 22 min. 20		min. 27 min. 47	
Typical values	M21	AW	495	570	26	90	60	
	M21	SR	430	530	28		105	75

SR : 15h/580°C

PACKAGING AND AVAILABLE SIZES

Diameter [mm]	1.2	1.4	1.6
Unit : 5 kg plastic spool S200	X		
15 kg spool B300	X	X	X
25 kg wire reel B435		X	X
200 kg Accutrak® Drum	X	X	X
270 kg metal coil			X

Outershield® MC710-H rev. C-EN22-25/1/15

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EXAMPLES OF MATERIALS TO BE WELDED

Steel grades/Standard	Type
General structural steel	
EN 10025	S185, S235, S275, S355
Ship plates	
ASTM A131	Grade A, B, D, AH32 to EH36
Cast steel	
EN 10213-2	G P 240R
Pipe material	
EN 10208-1	L210, L240, L290, L360
EN 10208-2	L240NB, L290NB, L360NB, L360QB, L240MB, L290MB, L360MB, L415MB, L415NB
API 5LX	X42, X46, X52, X60, X65
EN 10216-1/	P235T1, P235T2, P275T1
EN 10217-1	P275T2, P355N
Boiler & pressure vessel steel	
EN 10028-2	P235GH, P265GH, P295GH, P355GH
Fine grained steel	
EN 10025 part 3	S275, S355, S420, S460
EN 10025 part 4	S275M, S275ML, S355M, S355ML, S420M, S420ML, S460M, S460ML

CALCULATION DATA

Diameter (mm)	Arc mode	Electrical stick-out (mm)	Wire Feed		Current [A]	Arc Voltage [V]	Deposition rate (kg/h)	kg wire/kg weldmetal
			Speed (cm/min)					
1.2	Short arc	15	230	100	15	1.1	1.10	
			320	120	16	1.4	1.10	
			400	150	17	1.9	1.10	
1.2	Spray arc	20	940	275	31-34	4.8	1.10	
			1420	340	35-38	6.8	1.10	
			445	170	27-29	2.5	1.10	
1.4	Spray arc	25	890	270	29-32	5.0	1.10	
			1400	355	32-34	8.1	1.10	
			635	325	29-32	5.0	1.10	
1.6	Spray arc	25	890	400	34-37	7.0	1.10	
			1145	460	36-38	9.1	1.10	
			320	290	25-27	3.7	1.05	
2.0	Spray arc	28	510	385	28-31	6.1	1.05	
			760	510	32-35	9.3	1.05	
			400	280	28-32			
2.4	Spray arc	30	475	400	28-32			
			550	550	30-34			

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	230-380A	230-380A	230-300A	130-170A	140-175A
	26-36V	26-36V	26-30V	15-17V	16-17V
1.4	240-385A	240-385A	240-340A	160-180A	175-185A
	26-36V	26-36V	26-31V	14-15V	15-16V
1.6	280-460A	280-460A	270-300A		
	28-36V	28-36V	28-30V		
2.0	300-510A	300-510A			
	28-33V	28-33V			
2.4	400-550A	400-550A			
	32-36V	32-36V			