

Outershield® MC710-H

Mild steel metal cored wire

Classification

AWS A5.18/A5.18M : 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 scaly plate, good resistance to porosity
 Very good mechanical properties (CVN >47J at -30°C)
 Very low hydrogen (H_{DM} <5 ml/100g)
 Superior product consistency with optimal alloy control

Welding positions



ISO/ASME PA/1G PB/2F PC/2G PF/3Gup PE/4G

Current type/Shielding gas (ISO 14175)

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

Approvals

Shielding gas	ABS	BV	DB	DNV	TUV	GL	LR	RINA	RMRS
M21	3YSAH5	SA3YMH5	+	IIYMS(H5)	+	3YH5S	3YSH5	3YS	3YSH5

Chemical composition (w%), typical, all weld metal

Shielding gas	C	Mn	Si	P	S	H _{DM} ml/100g
M21	0.05	1.35	0.6	0.015	0.023	3

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			min. 400	min. 480	min. 22		min. 27		
EN ISO 17632-A (1.2/1.6)			min. 460	530-680	min. 20			min. 47	
Typical values	M21	AW	495	570	26	90	60		
	M21	SR	430	530	28		105	75	

SR : 1h/580°C

Packaging and available sizes

Unit type	Diameter (mm)				
	1.2	1.4	1.6	2.0	2.4
4.5kg plastic spool S200	X				
15 kg spool B300	X	X	X		
25kg wire reel B435		X	X	X	X
200kg Accutrak® Drum	X	X	X		
270kg metal coil	X		X	X	X

Outershield® MC710-H: rev. EN 25

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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 speed (cm/min)	Current (A)	Arc Voltage (V)	Deposition Rate (kg/h)	kg Wire/kg weld metal
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	635	180	28-30	2.7	1.10
			940	275	31-34	4.8	1.10
			1420	340	35-38	6.8	1.10
1.4	spray-arc	25	445	170	27-29	2.5	1.10
			890	270	29-32	5.0	1.10
			1400	355	32-34	8.1	1.10
1.6	spray-arc	25	635	325	29-32	5.0	1.10
			890	400	34-37	7.0	1.10
			1145	460	36-38	9.1	1.10
2.0	spray-arc	28	320	290	25-27	3.7	1.05
			510	385	28-31	6.1	1.05
			760	510	32-35	9.3	1.05
2.4	spray-arc	30	400	400	28-32		
			475	475	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/3G up	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			

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request