

# Outershield® 71E-H

## Mild steel rutile cored wire

### Classification

AWS A5.20-95 : E71T-1MJ H4  
EN 758-97 : T 46 3 P M 1 H5

### General description

All position gas shielded flux cored wire for high quality welding  
Excellent operator appeal due to superior welding characteristics  
Full out-of-position capability with higher deposition rates  
Exceptional mechanical properties (CVN > 47J at -30°C)  
Low hydrogen H<sub>DM</sub> < 5 ml/100g  
Superior product consistency with optimal alloy control  
Excellent wire feeding  
Very suitable for welding of root runs on ceramic backing

### Welding positions



### Current type/Shielding gas

DC +  
Ar+ (>5-25)% CO<sub>2</sub> (EN 439: M21)  
15-25 l/min

### Approvals

Shielding gas	ABS	BV	CTL	DB	DNV	FORCE	GL	LR	RINA	RMRS	TÜV
M21	3YSA,H5	SA3YMHH	+	+	IIYMSH5	+	3YH5S	3S,3YSH15	3YS	3S,3YSH5	+
C1	3YSA,H5	SA3YMHH		+	IIYMSH5		3HH5S		2YS		+

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

Shielding gas	C	Mn	Si	P	S	H <sub>DM</sub> ml/100g
M21	0.04	1.4	0.6	0.013	0.010	3

### Mechanical properties, all weld metal

	Shielding gas	Condition	Yield strength (N/mm <sup>2</sup> )	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Impact ISO-V (J)		
						-20°C	-30°C	-40°C
Required: AWS A5.20-95			min. 400	min. 480	min. 22			min. 27
EN 758-97			min. 460	530-680	min. 20		min. 47	
Typical values	M21	AW	570	620	25	90	65	40

### Packaging and available sizes

Unit type	Net weight/unit (kg)	Diameter (mm)
		1.2
Plastic spool S200	4.5	X
Wire reel B300	15	X
AccuTrack®	200	X

Outershield® 71E-H: rev. EN 15

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## Materials to be welded

Steel	Code	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
	EN 10216-1/ EN 10217-1	P235T1, P235T2, P275T1 P275T2, P355N
	EN 10028-2	P235GH, P265GH, P295GH, P355GH
Boiler & pressure vessel steel	EN 10028-2	P235GH, P265GH, P295GH, P355GH
	EN 10113-2	S275, S275, S355, S420
Fine grained steel	EN 10113-2	S275M, S275ML, S355M, S355ML, S420M, S420ML
	EN 10113-3	S275M, S275ML, S355M, S355ML, S420M, S420ML

## 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 weld metal
1.2	20	445	130	21-23	1.5	1.20
		700	180	22-24	2.3	1.20
		955	220	25-27	3.2	1.20
		1270	265	27-29	4.3	1.20
		1590	305	30-32	5.4	1.20

## Welding parameters, optimum fill, shielding gas Ar + (>5 - 25)% CO<sub>2</sub>

Diameter (mm)	Current/ Voltage	Welding position					
		PA/1G	PB/2F	PC/2G	PF/3G up	PG/3G down	PE/4G
1.2	(A)	230-260	230-260	200-240	200-240	160-220	160-220
	(V)	26-32	26-32	25-30	25-28	23-26	23-26