

Outershield® 71E-H

CLASSIFICATION

AWS A5.20	E71T-1M-JH4 / E71T-1C-H4	A-Nr	1
EN ISO 17632-A	T 46 3 P M 1 H5 / T 42 0 P C 1 H5	F-Nr	6
		9606 FM	1

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 with M21 shielding gas)
Superior product consistency with optimal alloy control
Excellent wire feeding
Very suitable for welding of root runs on ceramic backing
Designed for use with M21 Ar+15-25%CO₂ shielding gas. Suitable for use with C1 100%CO₂

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WELDING POSITIONS (ISO/ASME)



CURRENT TYPE / SHIELDING GAS (ISO 14175)

DC +
M21 : Mixed gas Ar+ (>15-25%) CO₂
C1 : Active gas 100% CO₂
Flow rate: 15-25 l/min

APPROVALS

Shielding gas	ABS	BV	DB	DNV	GL	LR	RINA	RMRS	TÜV
M21	3YSAH5	SA3YMH5	+	IIIVMS(H5)	3YH5S	3YSH5	3YSH5	3YSH5	+
C1	2YSA H5			IIVMS(H5)		2YS H5			

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

Shielding gas	C	Mn	Si	P	S	HDM
M21	0.04	1.4	0.6	0.013	0.010	3 ml/100 g
C1	0.05	1.3	0.6	0.015	0.010	3 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Shielding gas	Condition	Yield strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J)			
						0°C	-20°C	-30°C	-40°C
Required: AWS A5.20 EN ISO 17632-A			min. 400 min. 460	min. 480 530-680	min. 22 min. 20			min. 47	min. 27
Typical values	M21 C1	AW AW	570 520	620 575	25 24	80	90	65	40

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	1.2	1.6
5 kg plastic spool S200	X	
16 kg spool B300	X	X
16 kg spool S300	X	X
200kg Accutrak® Drum	X	

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EXAMPLES OF MATERIALS TO BE WELDED

Steel grades/Standard	Type
General structural steels	
EN 10025 part 2	S185, S235, S275
Ship plates	
ASTM A131	Grade A, B, D, AH32 to EH36
Cast steels	
EN 10213-2	G P 240R
Pipe material	
API 5LX	X42, X46, X52, X60, X65
ISO 3183	X42 - X60; L245-L415N, L245-L450Q, L245M - L450M
EN 10216-1	P235T1, P235T2, P275T1
EN 10217-1	P275T2, P355N
Boiler & pressure vessel steels	
EN 10028-2	P235-355 GH
EN 10028-3	P235-460 N, NH
Fine grained steels	
EN 10025 part 3	S275, S355, S420, S460
EN 10025 part 4	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 weldmetal
1.2	20	445	130	20-22	1.6	1.20
		700	180	23-25	2.3	1.20
		950	220	25-27	3.2	1.20
		1270	265	27-29	4.3	1.20
		1590	305	30-32	5.4	1.20
1.6	20	320	160	20-22	2.2	1.20
		510	230	21-24	3.3	1.20
		635	280	23-25	4.2	1.20
		760	300	24-26	5.0	1.20
		890	340	26-28	5.8	1.20
		1015	360	27-29	6.5	1.20
		1080	390	28-30	7.0	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	PG/3Gdown	PE/4G
1.2	230-260A	230-260A	200-240A	200-240A	160-220A	160-220A
	26-32V	26-32V	25-30V	25-28V	23-26V	26-28V