

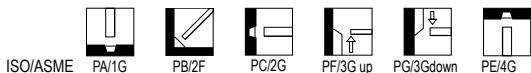
CLASSIFICATION

AWS A5.20/A5.20M : E71T-1M-JH4
EN ISO 17632-A : 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)
Very low hydrogen ($H_{DM} < 5 \text{ ml/100g}$)
Superior product consistency with optimal alloy control
Excellent wire feeding
Very suitable for welding of root runs on ceramic backing
By preference use OS 71 M-H for 100 % CO₂ shielding gas

WELDING POSITIONS



CURRENT TYPE

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

APPROVALS

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

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

Shielding gas	C	Mn	Si	P	S	H_{DM} , ml/100 g
M21	0.04	1.4	0.6	0.013	0.010	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	-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	AW	570	620	25	90	65	40

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	
Unit : 5kg plastic spool S200	X
15 kg spool B300	X
200kg Accutrak® Drum	X

Outershield® 71E-H

MATERIALS TO BE WELDED

Steel grades/Standard	Type
General structural steel	
EN 10025 part 2	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/	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
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

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	23-26V