

Outershield® 71M-H

CLASSIFICATION

AWS A5.20/A5.20M : E71T-1C-JH4
EN ISO 17632-A : T 46 2 P C 1 H5

GENERAL DESCRIPTION

Rutile gas shielded flux cored wire for high quality welding
Excellent operator appeal due to superior welding characteristics
Specially developed for welding with 100% CO₂; smooth arc with low spatter
Suitable for welding coated plate with use of 100% CO₂
Also suitable for welding on ceramic backing
Good mechanical properties (CVN > 47J at -20°C)
Very low hydrogen (H_{DM} < 5 ml/100g)
By preference use OS 71 E-H for Ar/CO₂ shielding gas

WELDING POSITIONS



CURRENT TYPE

DC +
C1 : Active gas 100% CO₂
Amount : 15-25 l/min

APPROVALS

Shielding gas	ABS	BV	CRS	NKK	DB	DNV	GL	LR	RINA	RMRS
C1	3YSAH5	SA3YMH5	3YH5S	KSW53G(C)H5	+	III Y40(H5)	3Y46H5S	3YSH5	3YSH5	3MSH5,3Y40MSH5

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

Shielding gas	C	Mn	Si	P	S	H _{DM} ml/100 g
C1	0.05	1.3	0.4	0.015	0.010	4

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	-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	C1	AW	580	620	24	80	40

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	1.2	1.6
Unit : 5 kg plastic spool S200	X	
15 kg spool B300	X	X
15 kg spool S300	X	X
25 kg wire reel B435		X
200 kg Accutrak® Drum	X	X

Outershield® 71M-H: rev. EN 25

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MATERIALS TO BE WELDED

Steel grades/Standard	Type
General structural steel	
EN 10025 part 2	S185, S235, S275
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, 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	21-23	1.7	1.20
		700	170	22-24	2.3	1.20
		955	220	25-27	3.3	1.20
		1270	260	27-29	4.5	1.20
		1590	290	30-32	5.6	1.20
1.6	20	320	180	21-23	2.2	1.20
		510	255	22-25	3.3	1.20
		635	300	24-26	4.2	1.20
		760	335	25-27	5.0	1.20
		890	370	27-29	5.8	1.20
		1015	395	28-30	6.5	1.20
		1080	415	29-31	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	230-280A	230-280A	200-240A	200-240A	160-220A	160-220A
	26-32V	26-32V	25-30V	25-28V	23-26V	26-28V
1.6	250-380A	250-380A	230-280A	220-260A	170-240A	170-240A
	24-32V	24-32V	24-30V	22-28V	22-28V	22-28V