

## Mild steel rutile cored wire

### Classification

AWS A5.20/A5.20M : E71T-1-H8/E71T-9-H8  
EN 758 : T 46 3 P C 1 H10

### General description

Rutile gas shielded flux cored wire developed for CO<sub>2</sub> shielding gas

Good mechanical properties (CVN > 47J at -30°C)

Smooth arc action and metal transfer; easy slag removal

Suitable for welding with ceramic backing

Applications include general fabrication, shipbuilding, building or bridge erection

### Welding positions



ISO/ASME PA/1G PB/2F PC/2G PF/3G up PG/3G down PE/4G PF/5Gup

### Current type/Shielding gas

DC +  
100% CO<sub>2</sub> (EN 439:C1)  
15-25 l/min

### Approvals

Shielding gas	ABS	BV	CRS	DNV	GL	LR	PRS	RINA	RMRS	CE
C1	3YSAH10	3YSH10	3YH10S	IIYS(H10)	3YH10S	3YSH10	3YSH10	3YSH10	+	+

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

Shielding gas	C	Mn	Si	P	S	H <sub>DM</sub> ml/100g
C1	0.05	1.4	0.4	0.015	0.010	6

### 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)		
						-18°C	-29°C	-30°C
Required: AWS A5.20			min. 400	min. 480	min. 22	min. 27 <sup>1)</sup> min. 27 <sup>2)</sup>		
EN 758			min. 460	530-680	min. 20			min. 47
Typical values	C1	AW	601	650	24			80

<sup>1)</sup>: E71T-1 requirement

<sup>2)</sup>: E71T-9 requirement

### Packaging and available sizes

Unit type	Net weight/unit (kg)	Diameter (mm)
		1.2
Plastic spool S200 Vacuum sealed	5	X
Wire reel B300	15	X
Plastic spool S300 Vacuum sealed	15	X

Outershield® 71C: rev. EN 02

# Outershield® 71C

## Materials to be welded

Steel	Code	Type
General structural steel	EN 10025	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/ EN 10217-1	P235T1, P235T2, P275T1 P275T2, P355N
	EN 10028-2	P235GH, P265GH, P295GH, P355GH
Boiler & pressure vessel steel	EN 10113-2	S275, S275, S355, S420
	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	125	21-23	1.5	1.21
		572	150	23-25	1.9	1.21
		699	170	24-26	2.4	1.21
		826	185	25-28	2.9	1.21
		953	210	26-28	3.3	1.21
		1080	230	27-29	3.7	1.21
		1207	245	28-30	4.2	1.21
		1524	285	30-32	5.3	1.21

## Welding parameters, optimum fill, shielding gas 100% CO<sub>2</sub> (C1)

Diameter (mm)	Current/ Voltage	Welding position					
		PA/1G	PB/2F	PC/2G	PF/3G up	PF/3F up	PE/4G
1.2	(A)	230-280	230-280	200-240	200-240	170-220	160-220
	(V)	26-32	26-32	25-30	25-28	26-28	23-26