

# Outershield® 70E-H

## Mild steel rutile cored wire

### Classification

AWS A5.20/A5.20M : E70T-1C-JH4 / E70T-1M-JH4  
 EN ISO 17632-A : T 46 3 R C 3 H5 / T 46 3 R M 3 H5

### General description

Gas shielded flux cored wire for high quality welding in downhand position  
 Excellent operator appeal due to superior welding characteristics  
 Capability with high deposition rate  
 Exceptional mechanical properties (CVN > 47J at -30°C)  
 Very 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 and welding on primed plate

### Welding positions



ISO/ASME PA/1G PB/2F

### Current type/Shielding gas (ISO 14175)

DC +  
 M21 : Mixed gas Ar+ (>15-25%) CO<sub>2</sub>  
 C1 : Active Gas 100% CO<sub>2</sub>  
 Amount : 15-25 l/min

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

Shielding gas	C	Mn	Si	P	S	H <sub>DM</sub> ml/100g
C1/M21	0.04	1.45	0.6	0.015	0.010	3

### Mechanical properties, typical, 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) -30°C	-40°C
Required: AWS A5.20			min. 400	min. 480	min. 22		min. 27
EN ISO 17632-A			min. 460	530-680	min. 20	min. 47	
Typical values	C1/M21	AW	570	620	25	55	40

### Packaging and available sizes

Unit type	Diameter (mm)
	1.6
15 kg spool B300	X
200kg Accutrak® Drum	X

Outershield® 70E-H: rev. EN 23

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## Materials to be welded

Steel grades/Standard	Type
<b>General structural steel</b>	
EN 10025	S185, S235, S275, S355
<b>Ship plates</b>	
ASTM A131	Grade A, B, D, AH32 to EH36
<b>Cast steel</b>	
EN 10213-2	G P 240R
<b>Pipe material</b>	
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
<b>Boiler &amp; pressure vessel steel</b>	
EN 10028-2	P235GH, P265GH, P295GH, P355GH
<b>Fine grained steel</b>	
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 weld metal
1.6	20	320	170	21-23	1.9	1.20
		510	235	22-25	3.1	1.20
		635	275	24-26	3.9	1.20
		760	310	25-27	4.7	1.20
		890	350	27-29	5.5	1.20
		1015	385	28-30	6.3	1.20
		1080	400	29-31	6.7	1.20

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## Welding parameters, optimum fill passes in shielding gas Ar + (>15 - 25)% CO<sub>2</sub>

Diameter (mm)	Welding positions					
	PA/1G	PB/2F	PC/2G	PF/3G up	PG/3G down	PE/4G
1.6	250-350A	250-350A	230-280A	220-260A	170-240A	170-240A
	24-32V	24-32V	24-30V	22-28V	22-28V	22-28V

**Liability:** All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

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