Outershield® 81Ni1C-H

CLASSIFICATION

AWS A5.29	E81T1-Ni1C-JH4	**A-Nr**	10
EN ISO 17632-A	T 50 4 1Ni P C 2 H5	**F-Nr**	6
		9606 FM	2

GENERAL DESCRIPTION

All position 100% CO_2 gas shielded 1% Ni flux cored wire, offshore and similar applications
Superior weldability, low spatter, good bead appearance
Outstanding operator appeal
Exceptional mechanical properties (CVN >47J at -40°C)
Superior product consistency with optimal alloy control
Excellent wire feeding
Meets NACE MR-0175 requirements

WELDING POSITIONS (ISO/ASME)

CURRENT TYPE / SHIELDING GAS (ISO 14175)

DC +
C1 : Active gas 100% CO_2
Flow rate : 15-25 l/min

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

Shielding gas	C	Mn	Si	P	S	Ni	HDM
C1	0.05	1.4	0.2	0.013	0.010	0.95	4 **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) -40°C
Required: AWS A5.29			min. 470	550-690	min. 19	min. 27
EN ISO 17632-A			min. 500	560-720	min. 18	min. 47
Typical values	C1	AW	530	600	24	80

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	**1.2**
16 kg spool B300	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, S355
Ship plates	
ASTM A131	Grade A, B, D, AH32 to EH40
Cast steels	
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 steels	
EN 10028-2	P235GH, P265GH, P295GH, P355GH
Fine grained steels	
EN 10025 part 3	S275N, S275NL, S355N, S355NL, S420N, S420NL, S460N, S460NL
EN 10025 part 4	S275M, S275ML, S355M, S355ML, S420M, S420ML, S460M, S460ML

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	2.5	1.20
		950	220	25-27	3.4	1.20
		1270	265	27-29	4.5	1.20
		1590	305	30-32	5.9	1.20

WELDING PARAMETERS, OPTIMUM FILL PASSES IN SHIELDING GAS Ar + (>15-25)% CO_2

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