

Outershield® 81Ni1-HSR

TOP FEATURES

- Specific design for stress relieved applications, guaranteed impact properties after PWHT.
- Superior weldability, low spatter, good bead appearance.
- Outstanding operator appeal. Optimal solution for wind mill foundations, oil and gas segment, structural and pipeline applications.
- Exceptional mechanical properties (CVN >47J at -50°C).
- Meets NACE MR-0175 requirements.

TYPICAL APPLICATIONS

- Applications requiring PWHT
- Steel construction
- Pipeline

CLASSIFICATION

AWS A5.29 E81T1-Ni1M-J
 EN ISO 17632-A T 50 5 1Ni P M21 2 H5 T

CURRENT TYPE

DC+

WELDING POSITIONS

All except vertical down

SHIELDING GASES (ACC. EN ISO 14175)

M21 Mixed gas Ar+ 15-25% CO₂
 Flow rate 15-25 l/min

APPROVALS

LR	BV	DNV	TÜV	DB
+	+	+	+	+

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

Shielding gas	C	Mn	Si	P	S	Ni	HDM
M21	0.05	1.4	0.2	0.013	0.010	0.95	3 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Shielding gas	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
						-40°C	-50°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	M21	AW	530	600	24	90	60
		SR: 1h/600°C, 3G up - V45°	525	590	25		70

* AW = As welded; SR = Stress relieved

PACKAGING AND AVAILABLE SIZES

Wire diameter (mm)	Packaging	Weight (kg)	Item number
1.2	SPOOL (B300)	16.0	942699N
	SPOOL (S300)	16.0	942719N

TEST RESULTS

Test results for mechanical properties, deposit or electrode composition and diffusible hydrogen levels were obtained from a weld produced and tested according to prescribed standards, and should not be assumed to be the expected results in a particular application or weldment. Actual results will vary depending on many factors, including, but not limited to, weld procedure, plate chemistry and temperature, weldment design and fabrication methods. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any welding consumable and procedure before use in the intended application

Safety Data Sheets (SDS) are available here:



Subject to Change – The information is accurate to the best of our knowledge at the time of printing.
Please refer to www.lincolnelectric.eu for any updated information.