

# Outershield® 81Ni1-H

## TOP FEATURES

- Best in class rutile flux cored wire for positional welding with very good impact toughness at -50°C.
- Outstanding operator appeal. Optimal solution for welding of wind mill foundations, oil and gas industry and structural applications.
- Superior product consistency with optimal alloy control.
- Can be applied for applications requiring CTOD testing.
- Meets NACE MR-0175 requirements.

## TYPICAL APPLICATIONS

- Offshore
- Wind tower floating foundations
- Steel construction
- Pipeline
- HYPERFILL

## CLASSIFICATION

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

## CURRENT TYPE

DC+

## WELDING POSITIONS

All except vertical down

## SHIELDING GASES (ACC. EN ISO 14175)

M21 Mixed gas Ar+ 15-25% CO<sub>2</sub>  
 Flow rate 15-25 l/min

## APPROVALS

LR	BV	DNV	RINA	RMRS	CWB
+	+	+	+	+	+

## 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

\* AW = As welded

## PACKAGING AND AVAILABLE SIZES

Wire diameter (mm)	Packaging	Weight (kg)	Item number
1.2	SPOOL (S200)	4.5	942316
	SPOOL (B300)	16.0	941357N

### 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](http://www.lincolnelectric.eu) for any updated information.