

# Outershield® 91K2-HSR

### TOP FEATURES

- Outershield 91K2-HSR is low alloyed rutile flux cored wire and provides significant value for industry segments such as nuclear, pipelines and pressure vessels. Specific design for stress relieved applications, guaranteed impact properties after PWHT.
- Superior weldability, low spatter, good bead appearance and outstanding operators appeal.
- Exceptional mechanical properties.
- Superior product consistency with optimal alloy control.
- Excellent wire feeding.
- Specific design to withstand high heat input procedures

### TYPICAL APPLICATIONS

- Welding of 550MPa steels
- PWHT applications
- Pipeline

### CLASSIFICATION

AWS A5.29E91T1-GM

EN ISO 18276-AT 55 4 1NiMo P M 2 H5

### CURRENT TYPE

DC+

### WELDING POSITIONS

All except vertical down

### SHIELDING GASES (ACC. EN ISO 14175)

M21Mixed gas Ar+ 15-25% CO<sub>2</sub>

Flow rate15-25 l/min

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

Shielding gas	C	Mn	Si	P	S	Ni	Mo	HDM
M21	0.05	1.4	0.2	0.013	0.010	1.4	0.4	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
Required: AWS A5.29			min. 540	620-760	min. 17	
EN ISO 18276-A			min. 550	642-820	min. 18	min. 47
Typical values	M21	AW	640	700	19	60

\* AW = As welded

### PACKAGING AND AVAILABLE SIZES

Wire diameter (mm)	Packaging	Weight (kg)	Item number
1.2	SPOOL (S200)	5.0	943211
	SPOOL (S300)	15.0	ED034116N
	SPOOL (B300)	16.0	943212N
	SPOOL (S300)	16.0	943210N

## 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.