

# Innershield® NR-203 Nickel (1%)

Low Alloy, All Position • AWS E71T8-Ni1

## Key Features

- ▶ Designed to produce a nickel bearing weld deposit
- ▶ Capable of producing weld deposits with impact toughness capable of exceeding 27 J (20 ft•lbf) at -29°C (-20°F)
- ▶ Color match on weathering steels
- ▶ Handles poor fit-up
- ▶ Root bead capability

## Typical Applications

- ▶ Roundabout groove welds on heavy wall tubular construction
- ▶ Offshore
- ▶ Structural fabrication
- ▶ Bridges and other structural components made from weathering steels
- ▶ NACE applications

## Conformances

AWS A5.29/A5.29M: 2005	E71T8-Ni1-H16
ASME SFA-5.29:	E71T8-Ni1-H16
ABS:	3YSA
Lloyd's Register:	3YS H15
DNV Grade:	III YMS H10
CWB/CSA W48-06:	E491T8-Ni1 H16 (E71TG-G-H16)
DB:	EN 758 T42 3 1Ni Y N
TUV:	EN 758 T42 3 1Ni Y N

## Welding Positions

All

## DIAMETERS / PACKAGING

Diameter in (mm)	14 lb (6.4 kg) Coil 56 lb (25.4 kg) Master Carton	50 lb (22.7 kg) Coil
5/64 (2.0)	ED012385	ED012386

## MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.29/A5.29M: 2005

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Hardness Rockwell B	Charpy V-Notch J (ft•lbf) @ -29°C (-20°F)
<b>Requirements</b> - AWS E71T8-Ni1	400 (58) min.	480-620 (70-90)	20 min.	–	27 (20) min.
<b>Typical Results<sup>(3)</sup></b> - As-Welded	450-480 (65-70)	545-575 (79-83)	27-32	86-90	81-156 (60-115)

## CHEMICAL COMPOSITION<sup>(1)</sup> – As Required per AWS A5.29/A5.29M: 2005

	%C	%Mn	%Si	%S	%P
<b>Requirements</b> - AWS E71T8-Ni1	0.12 max.	1.50 max.	0.80 max.	0.030 max.	0.030 max.
<b>Typical Results<sup>(3)</sup></b>	0.05-0.07	1.10-1.22	0.30-0.33	≤0.010	0.005-0.008
	%Ni	%Cr	%Mo	%V	%Al
<b>Requirements</b> - AWS E71T8-Ni1	0.80-1.10	0.15 max.	0.35 max.	0.05 max.	1.8 min.
<b>Typical Results<sup>(3)</sup></b>	0.89-1.05	0.02-0.03	0.01-0.02	≤0.01	0.8-1.0

## TYPICAL OPERATING PROCEDURES

Diameter, Polarity	CTWD mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)	Deposition Rate kg/hr (lb/hr)	Efficiency (%)
5/64 in (2.0 mm), DC-	25 (1)	1.3 (50)	16-17	145	1.4 (3.0)	1.0 (2.3)	76
		1.8 (70)	18-19	195	2.0 (4.3)	1.5 (3.3)	76
		2.3 (90)	19-20	240	2.5 (5.5)	2.0 (4.3)	78
		2.8 (110)	20-21	275	3.0 (6.7)	2.4 (5.3)	79
		3.0 (120)	21-22	290	3.3 (7.3)	2.6 (5.8)	79
		3.5 (140)	22-23	310	3.9 (8.5)	3.0 (6.9)	81

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer below.

Material Safety Data Sheets (MSDS) and Certificates of Conformance are available on our website at [www.lincolnelectric.com](http://www.lincolnelectric.com)

### 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.

### CUSTOMER ASSISTANCE POLICY

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