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:	E71T8-Ni1-H16
ABS:	3YSA
CWB/CSA:	E491T8-A3-Ni1-H16, E491T8-Ni1-H16
DNV:	III YMS H10
Lloyd's Register:	3YS H15
ISO:	T49 4 T8-1 NO A-N2 H15, T 42 3 1Ni Y N 1 H10

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[1]

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

DEPOSIT COMPOSITION[1]

	%C	%Mn	%Si	%S	%P
Requirements - AWS E71T8-Ni1	0.12 max	1.50 max	0.80 max	0.030 max	0.030 max
Typical Results[3]	0.05-0.07	1.10-1.22	0.30-0.33	≤0.010	0.005-0.008
	%Ni	**%Cr**	**%Mo**	**%V**	**%Al**
Requirements - AWS E71T8-Ni1	0.80-1.10	0.15 max	0.35 max	0.05 max	1.8 min
Typical Results[3]	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

[1]Typical all weld metal. [2]Measured with 0.2% offset. [3]See test results disclaimer