

# Shield-Arc® HYP+

Low Alloy, Cellulosic, Pipe • AWS E7010-P1

## Key Features

- ▶ Light slag for minimal arc interference
- ▶ Deep penetration
- ▶ Clean, visible weld puddle
- ▶ Superior puddle control

## Typical Applications

- ▶ Root pass welding of up to X80 grade pipe
- ▶ Hot, fill and cap pass of up to X65 grade pipe
- ▶ Vertical down welding

## Conformances

AWS A5.5/A5.5M: 2006	E7010-P1, E7010-G
ASME SFA-A5.5:	E7010-P1, E7010-G
ABS:	E7010-P1
CWB/CSA W48-06:	E4910-P1
TUV:	DIN EN ISO 2560-A:E

## Welding Positions

All

## DIAMETERS / PACKAGING

Diameter in (mm)	Length in (mm)	50 lb (22.7 kg) Easy Open Can
1/8 (3.2)	14 (350)	ED029511
5/32 (4.0)	14 (350)	ED029513
3/16 (4.8)	14 (350)	ED029509

## MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.5/A5.5M: 2006

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf) @ -29°C (-20°F)
Requirements - AWS E7010-P1	415 (60) min.	490 (70) min.	22 min.	27 (20) min.
Typical Results <sup>(3)</sup> - As-Welded	435-525 (63-76)	525-635 (76-92)	22-28	27-56 (20-41)

## DEPOSIT COMPOSITION<sup>(1)</sup> – As Required per AWS A5.5/A5.5M: 2006

	%C	%Mn	%Si	%P	%S
Requirements - AWS E7010-P1	0.20 max.	1.20 max.	0.60 max.	0.03 max.	0.03 max.
Typical Results <sup>(3)</sup>	0.13-0.17	0.49-0.63	0.08-0.18	≤ 0.01	≤ 0.01
	%Ni	%Cr	%Mo	%V	
Requirements - AWS E7010-P1	1.00 max.	0.30 max.	0.50 max.	0.50 max.	
Typical Results <sup>(3)</sup>	0.01-0.02	0.02	0.27-0.31	< 0.01	

## TYPICAL OPERATING PROCEDURES

Polarity	Current (Amps)		
	1/8 in (3.2 mm)	5/32 in (4.0 mm)	3/16 in (4.8 mm)
DC+	75-130	90-185	140-225

<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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