

THE LINCOLN ELECTRIC COMPANY
22801 St. Clair Avenue
Cleveland, Ohio 44117-1199
CERTIFIED MATERIAL TEST REPORT

This is to certify that the following was manufactured under Lot Control per AWS A5.01, Class S4 Schedule K. The following test was run on .045 Pipeliner @ 80S-G (Q2 LOT@ 14601187). Procedures in accordance with AWS A5.28 DC+ only for classification ER80S-G were followed. This test report is in accordance with EN10204 Type 3.1 and ISO 10474 3.1.B.

The product stated herein was manufactured and supplied in accordance with the Quality System Program of The Lincoln Electric Co., Cleveland, Ohio, U.S.A. as outlined in our Quality Assurance Manual. The Quality System Program of The Lincoln Electric Co. has been accepted by ASME and approved by VdTUV, and is certified to ISO 9001.

Test Conditions

Electrode Size	.045"
Electrode Polarity	DC+
Wire Feed Speed	430
Current (amps)	330
Arc Voltage (volts)	30
Preheat / Interpass Temp °C (°F)	135 (275) / 149 (300)
Shielding Gas	80%Ar / 20% CO ₂

Mechanical Properties

AWS A5.28

Yield Strength, 0.2% offset method MPa (ksi)	640 (93)*	Not Specified
Tensile Strength MPa (ksi)	700 (102)*	550 MPa (80 ksi) min.
Elongation %	25*	Not Specified

Impact Properties

Average	135 (99)	Not Specified
Joules @ -29°C (ft-lbs. @ -20°F)	141, 124, 139 (104, 92, 102)	Not Specified

Wire Chemistry

% Carbon	0.089	Not Specified
% Manganese	1.75	Not Specified
% Silicon	0.57	Not Specified
% Phosphorous	0.006	Not Specified
% Sulfur	0.009	Not Specified
% Nickel	0.01**	0.50 min.
% Chromium	0.03**	0.30 min.
% Molybdenum	0.47**	0.20 min.
% Vanadium	0.00***	Not Specified
% Copper (Total)	0.15	Not Specified

Diffusible Hydrogen

Per AWS A4.3 (mL/100g weld metal)	1.8, 1.7, 1.8, 2.0 = 1.8 avg.	REPORT ONLY
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This is to certify that the contents of this report are correct and accurate as contained in the records of The Lincoln Electric Company.

Radiographic Test: Met requirements

Test assembly constructed of X-70 Pipe Steel.

*The strength and elongation properties were obtained from tensile specimen artificially aged at 105°C (220°F) for 48 hours.

**In order to meet the requirements of the "G" classification, the electrode must have a minimum of one or more of these elements.

*** Results below the detection limits of the instrument or lower than the precision required by specification are reported as zero.

Rajeev Katiyar

2feb2016

Rajeev Katiyar

Date

Manager, Quality Assurance

Tim Peck

Tim Peck

Manager, Specials Products

2 FEB 2016

Date

"Note: The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal Statutes including Federal Law, Title 18, Chapter 47."

2.2.16