

PIPELINER® LH-D80/90/100

Low Hydrogen Vertical-Down SMAW electrode designed for welding high strength pipe

Cross country pipe welding electrodes designed for vertical down progression producing repeatable mechanical properties with lowest diffusible hydrogen levels.

PERFORMANCE PERFECTED

Welders Prefer Pipeliner LH-D

- Easy to use with controllable slag
- Easy transition for welders experienced with cellulosic electrodes
- Touch start tapered tip eliminates starting porosity and arc strikes on pipe

Durable, Reliable, Consistent

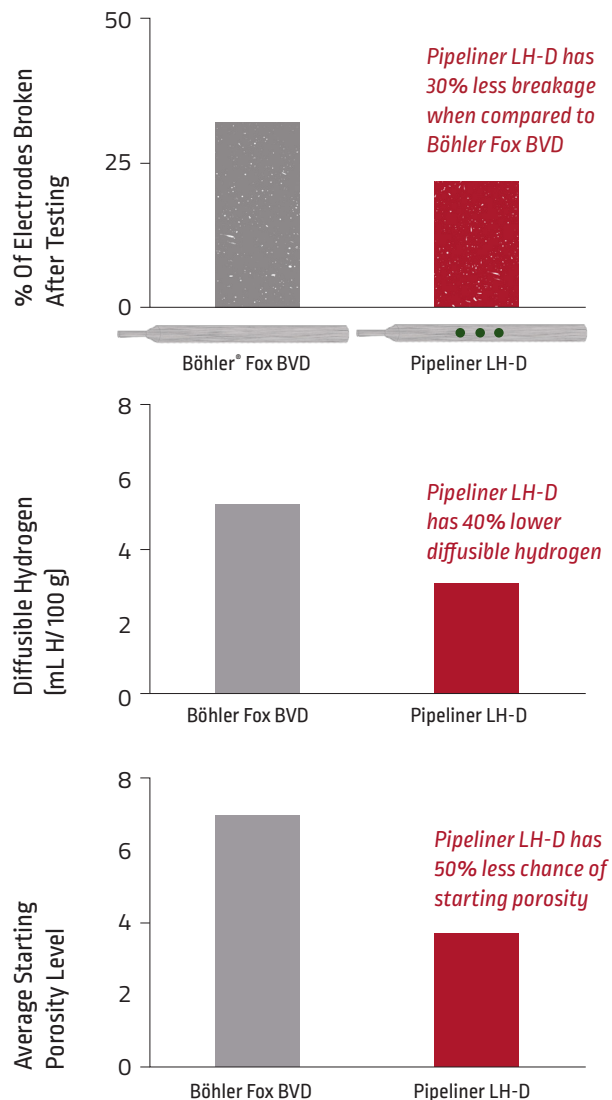
- Durable coating doesn't break during shipping or usage
- 80-90% higher productivity versus vertical-up welding
- Q2 Lot® - Each lot certified with actual deposit composition

Properties you can Count On

- H4R diffusible hydrogen and moisture resistance requirements.
- Pipeliner LH-D80 and 90 complies to NACE MR0175 for sour gas applications.
 - » Hardness < 235 HV₁₀
 - » Ni < 1.0%

The Symbol of Dependability

- Our stick electrodes are easily identified by three dots, which are a symbol of quality, consistency, and unparalleled welding expertise.



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.

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DIAMETERS / PACKAGING

| Diameter mm (in) | Length mm (in) | PIPELINER LH-D80 | | PIPELINER LH-D90 | | PIPELINER LH-D100 | |
|---------------------|-------------------|------------------------------|-------------------------------|------------------------------|-------------------------------|------------------------------|-------------------------------|
| | | 10 lb (4.5 kg) Easy Open Can | 30 lb (13.6 kg) Master Carton | 10 lb (4.5 kg) Easy Open Can | 30 lb (13.6 kg) Master Carton | 10 lb (4.5 kg) Easy Open Can | 30 lb (13.6 kg) Master Carton |
| 3.2 (1/8) | 350 (14) | | ED032626 | | ED032629 | | ED032632 |
| 4.0 (5/32) | 350 (14) | | ED032627 | | ED032630 | | ED032633 |
| 4.5 (11/64) | 350 (14) | | ED032628 | | ED032631 | | ED032634 |

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

| | | Yield Strength ⁽²⁾ MPa (ksi) | Tensile Strength MPa (ksi) | Elongation % | Charpy V-Notch J (ft-lbf) | |
|-------------------|--|--|-------------------------------|-----------------|------------------------------|-----------------|
| | | | | | @ -29°C [-20°F] | @ -46°C [-50°F] |
| PIPELINER LH-D80 | Requirements - AWS E8045-P2 H4R | 460 (67) min | 550 (80) min | 19 min | 27 (20) min | Not Specified |
| | Typical Results ⁽³⁾ - As-Welded | 485-515 (70-75) | 570-600 (83-87) | 26-31 | 75-125 (55-92) | 50-95 (37-70) |
| PIPELINER LH-D90 | Requirements - AWS E9045-P2 H4R | 530 (77) min | 620 (90) min | 17 min | 27 (20) min | Not Specified |
| | Typical Results ⁽³⁾ - As-Welded | 550-600 (80-87) | 625-670 (91-97) | 26-31 | 75-125 (55-92) | 50-95 (37-70) |
| PIPELINER LH-D100 | Requirements - AWS E10045-P2 H4R | 600 (87) min | 690 (100) min | 16 min | 27 (20) min | Not Specified |
| | Typical Results ⁽³⁾ - As-Welded | 620-690 (90-100) | 705-750 (102-109) | 21-28 | 75-110 (55-81) | 56-85 (41-63) |

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

| | | %C | %Mn | %Si | %P | %S |
|--|--|---------------------------------|-------------|-----------|----------|---|
| | | Requirements - AWS E8045-P2 H4R | 0.12 max | 0.90-1.70 | 0.80 max | 0.03 max |
| PIPELINER LH-D80 | Typical Results ⁽³⁾ - As-Welded | 0.04-0.06 | 1.10-1.25 | 0.35-0.50 | ≤ 0.01 | ≤ 0.01 |
| | | %Ni | %Cr | %Mo | %V | Diffusible Hydrogen (mL/100g weld deposit) |
| | Requirements - AWS E8045-P2 H4R | 1.00 max | 0.20 max | 0.50 max | 0.05 max | 4.0 max |
| | Typical Results ⁽³⁾ - As-Welded | ≤ 0.04 | ≤ 0.05 | ≤ 0.02 | ≤ 0.01 | 2-4 |
| PIPELINER LH-D90 | | %C | %Mn | %Si | %P | %S |
| | Requirements - AWS E9045-P2 H4R | 0.12 max | 0.90-1.70 | 0.80 max | 0.03 max | 0.03 max |
| | Typical Results ⁽³⁾ - As-Welded | 0.04-0.06 | 1.10-1.25 | 0.35-0.50 | ≤ 0.01 | ≤ 0.01 |
| | | %Ni | %Cr | %Mo | %V | Diffusible Hydrogen (mL/100g weld deposit) |
| Requirements - AWS E9045-P2 H4R | 1.00 max | 0.20 max | 0.50 max | 0.05 max | 4.0 max | |
| Typical Results ⁽³⁾ - As-Welded | 0.25-0.30 ⁽⁴⁾ / 0.80-1.00 ⁽⁵⁾ | ≤ 0.05 | 0.15-0.25 | ≤ 0.01 | 2-4 | |
| PIPELINER LH-D100 | | %C | %Mn | %Si | %P | %S |
| | Requirements - AWS E10045-P2 H4R | 0.12 max | 0.90 - 1.70 | 0.80 max | 0.03 max | 0.03 max |
| | Typical Results ⁽³⁾ - As-Welded | 0.04-0.06 | 1.25-1.65 | 0.35-0.55 | ≤ 0.01 | ≤ 0.01 |
| | | %Ni | %Cr | %Mo | %V | Diffusible Hydrogen (mL/100g weld deposit) |
| Requirements - AWS E10045-P2 H4R | 1.00 max | 0.20 max | 0.50 max | 0.05 max | 4.0 max | |
| Typical Results ⁽³⁾ - As-Welded | 0.70-1.00 | ≤ 0.08 | 0.40-0.50 | ≤ 0.01 | 2-4 | |

TYPICAL OPERATING PROCEDURES

| | Polarity | Current (Amps) | | |
|-------------------|----------|-----------------|------------------|-------------------|
| | | 3.2 mm (1/8 in) | 4.0 mm (5/32 in) | 4.5 mm (11/64 in) |
| PIPELINER LH-D80 | DC+ | 120-170 | 170-250 | 200-300 |
| PIPELINER LH-D90 | DC+ | 120-170 | 170-250 | 200-300 |
| PIPELINER LH-D100 | DC+ | 120-170 | 170-250 | 200-300 |

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer on previous page ⁽⁴⁾Range for 3.2 mm (1/8 in) size only. ⁽⁵⁾Range for 4.0 mm (5/32 in) and 4.5 mm (11/64 in) sizes.
NOTE: This product contains micro-alloying elements. Additional information available on request.

CUSTOMER ASSISTANCE POLICY

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