



2669 Martin Luther King Jr Blvd  
Youngstown, OH 44510

**VALLOUREC STAR LP**  
Seamless Tubular Products

Certified Test Report  
06/03/2021  
Revision: 0

Order: Y-221119494-001 Desc: Seamless Line Pipe- Normalized Rolled SLN / (Heat): LF0162  
Grade: API 5L X42/B N/BN PSL2 46th Edition April 01, 2018 Split: 00  
OD(In): 3.500 Wall(In): 0.300 Lbs/Ft: 10.26 Length: Double Random  
End Finish: Plain End Beveled  
Comments: Melted and Manufactured in Youngstown, Ohio USA  
Pipe is also manufactured to: ASTM A106B/C-19a, ASTM A53B-20, ASME SA106B/C-2019, ASME SA53B-2020. Vallourec Star's QA program meets the requirements of DIN EN10204-2004 Type 3.1. Satisfies NACE MR0175/ISO15156:2015 and ANSI/NACE MR0103/ISO17945:2015.  
No repair welding has been conducted. Material is free from Mercury.

**Mechanical Properties**

**Supplemental Requirements**

| Orientation  | Type  | Position | Tensile Size Specimen Cross Section |            |             | Strength (ksi) |         |           | Elongation  |         |      |
|--------------|-------|----------|-------------------------------------|------------|-------------|----------------|---------|-----------|-------------|---------|------|
|              |       |          | Width (In)                          | Thick (In) | Area (sqIn) | Yield          | Tensile | Y/T Ratio | Gage Length | % Elong | % RA |
| Longitudinal | Strip | Lead     | 0.750                               | 0.310      | 0.2400      | 50.1           | 75.3    | 0.67      | 2           | 35.8    | 57.4 |

|                       |               |
|-----------------------|---------------|
| Flattening Test       | PASS          |
| Hardness 3 Point      | 78.7 avg HRBW |
| Hydrostatic Pressure  | 3900 psi      |
| Hydrostatic Hold Time | 5 seconds     |

Required Min/Max Yield Strength (ksi): 42.1/71.8

Required Min/Max Tensile Strength (ksi): 70/95

Calculated Max Internal Yield (psi): 7520

Required Min Elongation(%): 30

**Chemical Analysis Chem Spec: 61M**

| WT%       | C    | Mn   | P     | S     | Si   | Cu   | Ni   | Cr   | Mo   | Sn    | Nb    | V     | Al    | Ca     | B      | Ti    | N      | C.E. |
|-----------|------|------|-------|-------|------|------|------|------|------|-------|-------|-------|-------|--------|--------|-------|--------|------|
| Heat      | 0.20 | 0.69 | 0.007 | 0.005 | 0.21 | 0.18 | 0.07 | 0.14 | 0.04 | 0.007 | 0.001 | 0.001 | 0.028 | 0.0019 | 0.0003 | 0.001 | 0.0080 | 0.37 |
| Product 1 | 0.20 | 0.70 | 0.008 | 0.005 | 0.21 | 0.19 | 0.07 | 0.14 | 0.04 | 0.009 | 0.000 | 0.001 | 0.029 | 0.0015 | 0.0002 | 0.002 | 0.0088 | 0.37 |
| Product 2 | 0.21 | 0.71 | 0.009 | 0.005 | 0.22 | 0.19 | 0.08 | 0.14 | 0.04 | 0.009 | 0.000 | 0.001 | 0.029 | 0.0014 | 0.0002 | 0.002 | 0.0082 | 0.38 |

Charpy Impact Testing - Not required per API.

This material has been produced and tested in accordance with the requirements of applicable specifications unless otherwise listed below. We hereby certify that the above test results are representative of those contained in the records of the company. Any modification to this certification as provided by Vallourec Star without the expressed written consent of Vallourec Star negates the validity of this test report. Vallourec Star is not responsible for the inability of this material to meet specific applications.

THIS CERTIFICATE IS NOTARIZED ONLY WHEN REQUESTED.

Signed:

Name: Jeff Schultz, Lab Supervisor

Date Approved: 06/03/2021

This document is uncontrolled when printed. Always refer to the MTR System for the most current version. FS-VMS-8.2.4.1.1 Rev 6



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|  |  |                             |                              |
|--|--|-----------------------------|------------------------------|
| <b>Order:</b> Y-221119494-001                                    | <b>Desc:</b> Seamless Line Pipe- Normalized Rolled | <b>SLN / (Heat):</b> LF0162 |                              |
| <b>Grade:</b> API 5L X42/B N/BN PSL2 46th Edition April 01, 2018 |  | <b>Split:</b> 00            |                              |
| <b>OD(in):</b> 3.500   | <b>Wall(in):</b> 0.300                             | <b>Lbs/Ft:</b> 10.26        | <b>Length:</b> Double Random |
| <b>End Finish:</b> Plain End Beveled                             |  |                             |                              |
| <b>Inspection Company:</b> Tuboscope                             |  |                             |                              |

### Non-Destructive Evaluation Criteria

|                     |
|---------------------|
| <b>EMI CHANNELS</b> |
| ID                  |
| 10% Transverse      |
| 10% Transverse      |
| OD                  |
| 5% Longitudinal     |
| 5% Transverse       |

|                    |
|--------------------|
| <b>UT CHANNELS</b> |
| OD                 |
| 5% Longitudinal    |
| 5% Transverse      |

|                                    |
|------------------------------------|
| <b>WALL THICKNESS CHECK</b>        |
| 75% Wall Reduction                 |
| 87.5% Wall Reduction               |
| Required Volumetric Coverage: 100% |

|                                 |
|---------------------------------|
| <b>END AREA</b>                 |
| OD-Visual                       |
| White Light                     |
| ID-Visual                       |
| White Light                     |
| Method: UT or Go/No-Go          |
| OD                              |
| Longitudinal                    |
| ID                              |
| Longitudinal                    |
| Wall                            |
| 25% Wall Thickness Verification |

|                                |
|--------------------------------|
| <b>ADDITIONAL REQUIREMENTS</b> |
| Notch Length 1.5" Max          |
| Notch Width .020" Max          |
| PSL2                           |