

# FIBERSPAR TECH NOTES

Product, service and cost savings information from the leader in spoolable pipeline systems

## Fiberspar LinePipe™ Product Data Sheet – Metric

Fiberspar LinePipe is intended for corrosive gathering and injection applications including general and sour produced fluids and gases. Fiberspar LinePipe is available with high-density polyethylene or high-temperature polyethylene pressure barriers with temperature ratings to 60°C and 82°C, respectively. **Other pressure ratings and diameters available upon request.**

| Product Name          | ID (mm) | OD (mm) | Nominal Reinforced Wall Thickness Nom (mm) | Minimum Reinforced Wall Thickness Min (mm) | Weight (kg/m) | Recommended Maximum Operating Pressure <sup>2</sup> (MPa) | Minimum Burst Room Temperature (MPa) | Minimum Burst Operating Temperature (MPa) | Maximum Recommended Install Tensile Load (kgf) | Minimum Bend Radius (cm) |
|-----------------------|---------|---------|--------------------------------------------|--------------------------------------------|---------------|-----------------------------------------------------------|--------------------------------------|-------------------------------------------|------------------------------------------------|--------------------------|
| <b>300 Series</b>     |         |         |                                            |                                            |               |                                                           |                                      |                                           |                                                |                          |
| FS LP 3" 300 (E)      | 64      | 77      | 1.4                                        | 1.2                                        | 1.76          | 2.07                                                      | 15.30                                | 13.00                                     | 1,360                                          | 181                      |
| FS LP 3" 300 (X)      | 64      | 77      | 1.4                                        | 1.2                                        | 1.76          | 2.07                                                      | 15.30                                | 11.47                                     | 1,361                                          | 181                      |
| FS LP 4" 300 (E)      | 84      | 102     | 1.8                                        | 1.6                                        | 2.96          | 2.07                                                      | 14.93                                | 12.69                                     | 2,350                                          | 242                      |
| FS LP 4" 300 (X)      | 84      | 102     | 1.8                                        | 1.6                                        | 2.96          | 2.07                                                      | 14.93                                | 11.20                                     | 2,350                                          | 242                      |
| FS LP 6" 300 (E)      | 121     | 139     | 2.0                                        | 1.7                                        | 4.43          | 2.07                                                      | 11.71                                | 9.95                                      | 3,610                                          | 335                      |
| FS LP 6" 300 (X)      | 121     | 139     | 2.0                                        | 1.7                                        | 4.43          | 2.07                                                      | 11.71                                | 8.78                                      | 3,610                                          | 335                      |
| <b>750 Series</b>     |         |         |                                            |                                            |               |                                                           |                                      |                                           |                                                |                          |
| FS LP 2 ½" 750 (E)    | 51      | 65      | 2.0                                        | 1.7                                        | 1.56          | 5.17                                                      | 27.17                                | 23.09                                     | 1,579                                          | 149                      |
| FS LP 2 ½" 750 (X)    | 51      | 65      | 2.0                                        | 1.7                                        | 1.56          | 5.17                                                      | 27.17                                | 20.37                                     | 1,570                                          | 149                      |
| FS LP 3 ½" 750 (E)    | 75      | 91      | 2.3                                        | 1.9                                        | 2.60          | 5.17                                                      | 21.00                                | 17.85                                     | 2,590                                          | 215                      |
| FS LP 3 ½" 750 (X)    | 75      | 91      | 2.3                                        | 1.9                                        | 2.60          | 5.17                                                      | 21.00                                | 15.75                                     | 2,590                                          | 215                      |
| FS LP 4 ½" 750 (E)    | 101     | 120     | 3.1                                        | 2.6                                        | 4.28          | 5.17                                                      | 21.34                                | 18.14                                     | 4,730                                          | 288                      |
| FS LP 4 ½" 750 (X)    | 101     | 120     | 3.1                                        | 2.6                                        | 4.27          | 5.17                                                      | 21.34                                | 16.00                                     | 4,730                                          | 288                      |
| FS LP 6" 750 (E)      | 121     | 143     | 3.8                                        | 3.2                                        | 6.01          | 5.17                                                      | 22.06                                | 18.75                                     | 6,960                                          | 344                      |
| FS LP 6" 750 (X)      | 121     | 143     | 3.8                                        | 3.2                                        | 6.01          | 5.17                                                      | 22.06                                | 16.55                                     | 6,960                                          | 344                      |
| FS LP 6 ½" 750 (E)    | 142     | 166     | 4.1                                        | 3.5                                        | 7.65          | 5.17                                                      | 20.08                                | 17.07                                     | 8,760                                          | 403                      |
| FS LP 6 ½" 750 (X)    | 142     | 166     | 4.1                                        | 3.5                                        | 7.65          | 5.17                                                      | 20.08                                | 15.06                                     | 8,760                                          | 403                      |
| <b>1,500 Series</b>   |         |         |                                            |                                            |               |                                                           |                                      |                                           |                                                |                          |
| FS LPJ 2 ½" 1,500 (E) | 48      | 64      | 2.8                                        | 2.4                                        | 1.83          | 10.34                                                     | 39.04                                | 33.19                                     | 2,150                                          | 147                      |
| FS LPJ 2 ½" 1,500 (X) | 48      | 63      | 2.4                                        | 2.0                                        | 1.67          | 10.34                                                     | 33.36                                | 25.02                                     | 1,810                                          | 145                      |
| FS LPJ 3 ½" 1,500 (E) | 72      | 92      | 4.1                                        | 3.5                                        | 3.50          | 10.34                                                     | 38.90                                | 33.07                                     | 4,620                                          | 216                      |
| FS LPJ 3 ½" 1,500 (X) | 72      | 91      | 3.4                                        | 2.9                                        | 3.24          | 10.34                                                     | 32.10                                | 24.08                                     | 3,820                                          | 214                      |
| FS LPJ 4 ½" 1,500 (E) | 95      | 121     | 5.4                                        | 4.6                                        | 5.69          | 10.34                                                     | 38.53                                | 32.75                                     | 7,980                                          | 285                      |
| FS LPJ 4 ½" 1,500 (X) | 95      | 119     | 4.5                                        | 3.9                                        | 5.37          | 10.34                                                     | 32.14                                | 24.10                                     | 6,740                                          | 284                      |
| FS LPJ 6" 1,500 (E)   | 115     | 143     | 5.5                                        | 4.7                                        | 7.74          | 10.34                                                     | 32.51                                | 27.63                                     | 9,990                                          | 344                      |
| FS LPJ 6" 1,500 (X)   | 115     | 143     | 5.5                                        | 4.7                                        | 7.74          | 10.34                                                     | 32.51                                | 24.38                                     | 9,990                                          | 344                      |
| FS LPJ 6 ½" 1,500 (E) | 142     | 175     | 6.9                                        | 5.8                                        | 11.48         | 10.34                                                     | 32.53                                | 27.65                                     | 15,310                                         | 425                      |
| FS LPJ 6 ½" 1,500 (X) | 142     | 175     | 6.9                                        | 5.8                                        | 11.47         | 10.34                                                     | 32.53                                | 24.40                                     | 15,310                                         | 425                      |
| <b>2,500 Series</b>   |         |         |                                            |                                            |               |                                                           |                                      |                                           |                                                |                          |
| FS LPJ 2 ½" 2,500 (E) | 52      | 73      | 4.5                                        | 3.8                                        | 2.86          | 17.24                                                     | 54.96                                | 46.71                                     | 3,840                                          | 169                      |
| FS LPJ 3 ½" 2,500 (E) | 77      | 106     | 6.6                                        | 5.6                                        | 5.99          | 17.24                                                     | 54.42                                | 46.26                                     | 8,560                                          | 253                      |
| <b>2,250 Series</b>   |         |         |                                            |                                            |               |                                                           |                                      |                                           |                                                |                          |
| FS LPJ 4 ½" 2,250 (E) | 91      | 122     | 7.2                                        | 6.1                                        | 7.53          | 15.51                                                     | 51.10                                | 43.43                                     | 10,790                                         | 292                      |

\*Pressure ratings are based on minimum 20-year service life using ASTM D2992 long-term test procedures. Recommended maximum operating pressure is Fiberspar recommendation for general oilfield water, low-vapor pressure hydrocarbon, and multi-phase service conditions at the maximum rated temperature. Consult Fiberspar for a recommended maximum pressure rating for other service conditions.

E = High-density polyethylene (HDPE) rated from -34°C to 60°C

X = High-temperature polyethylene (HTP) rated from -34°C to 82°C

All products are hydrotested to 1.5 times maximum recommended operating pressure. Material selection is based on the desired operating temperature and chemical compatibility of Fiberspar LinePipe constituents with fluids.

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Fiberspar® spoolable composite pipe and fittings are covered by one or more of the following U.S. Patents: 6,016,845, 5,921,285, 6,148,866, 6,286,558, 6,357,485, 6,604,550, 6,857,452, 7,285,333, 6,004,639, 6,361,299, 6,706,348, 5,988,702 and one or more of the following Canadian Patents: 2,233,295, 2,282,358, 2,321,536, 2,409,304, 2,305,148, 2,233,345. Additional U.S. and Canadian patents are pending.



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## Fiberspar LinePipe™ Product Data Sheet – Imperial

Fiberspar LinePipe is intended for corrosive gathering and injection applications including general and sour produced fluids and gases. Fiberspar LinePipe is available with high-density polyethylene or high-temperature polyethylene pressure barriers with temperature ratings to 140°F and 180°F, respectively. **Other pressure ratings and diameters available upon request.**

| Product Name            | ID (in.) | OD (in.) | Nominal Reinforced Wall Thickness (nom.) | Minimum Reinforced Wall Thickness (min.) | Weight (lbs/ft) | Recommended Maximum Operating Pressure <sup>2</sup> (psi) | Minimum Burst Room Temperature (psi) | Minimum Burst Operating Temperature (psi) | Maximum Recommended Install Tensile Load (lbf) | Minimum Bend Radius (in.) |
|-------------------------|----------|----------|------------------------------------------|------------------------------------------|-----------------|-----------------------------------------------------------|--------------------------------------|-------------------------------------------|------------------------------------------------|---------------------------|
| <b>300 Series</b>       |          |          |                                          |                                          |                 |                                                           |                                      |                                           |                                                |                           |
| FS LP 3" 300 (E)        | 2.51     | 3.04     | 0.055                                    | 0.047                                    | 1.18            | 300                                                       | 2,219                                | 1,886                                     | 3,000                                          | 71                        |
| FS LP 3" 300 (X)        | 2.51     | 3.04     | 0.055                                    | 0.047                                    | 1.18            | 300                                                       | 2,219                                | 1,664                                     | 3,000                                          | 71                        |
| FS LP 4" 300 (E)        | 3.33     | 4.01     | 0.072                                    | 0.061                                    | 1.99            | 300                                                       | 2,165                                | 1,840                                     | 5,480                                          | 95                        |
| FS LP 4" 300 (X)        | 3.33     | 4.01     | 0.072                                    | 0.061                                    | 1.99            | 300                                                       | 2,165                                | 1,624                                     | 5,480                                          | 95                        |
| FS LP 6" 300 (E)        | 4.75     | 5.48     | 0.079                                    | 0.067                                    | 2.98            | 300                                                       | 1,698                                | 1,443                                     | 7,960                                          | 132                       |
| FS LP 6" 300 (X)        | 4.75     | 5.48     | 0.079                                    | 0.067                                    | 2.98            | 300                                                       | 1,698                                | 1,274                                     | 7,960                                          | 132                       |
| <b>750 Series</b>       |          |          |                                          |                                          |                 |                                                           |                                      |                                           |                                                |                           |
| FS LP 2 1/2" 750 (E)    | 2.00     | 2.55     | 0.080                                    | 0.068                                    | 1.05            | 750                                                       | 3,940                                | 3,349                                     | 3,480                                          | 59                        |
| FS LP 2 1/2" 750 (X)    | 2.00     | 2.55     | 0.080                                    | 0.068                                    | 1.05            | 750                                                       | 3,940                                | 2,955                                     | 3,480                                          | 59                        |
| FS LP 3 1/2" 750 (E)    | 2.96     | 3.59     | 0.090                                    | 0.076                                    | 1.75            | 750                                                       | 3,046                                | 2,589                                     | 5,720                                          | 85                        |
| FS LP 3 1/2" 750 (X)    | 2.96     | 3.59     | 0.090                                    | 0.076                                    | 1.75            | 750                                                       | 3,046                                | 2,285                                     | 5,720                                          | 85                        |
| FS LP 4 1/2" 750 (E)    | 3.99     | 4.73     | 0.122                                    | 0.103                                    | 2.87            | 750                                                       | 3,095                                | 2,631                                     | 10,440                                         | 113                       |
| FS LP 4 1/2" 750 (X)    | 3.99     | 4.73     | 0.122                                    | 0.103                                    | 2.87            | 750                                                       | 3,095                                | 2,321                                     | 10,440                                         | 113                       |
| FS LP 6" 750 (E)        | 4.75     | 5.62     | 0.150                                    | 0.128                                    | 4.04            | 750                                                       | 3,200                                | 2,720                                     | 15,360                                         | 136                       |
| FS LP 6" 750 (X)        | 4.75     | 5.62     | 0.150                                    | 0.128                                    | 4.04            | 750                                                       | 3,200                                | 2,400                                     | 15,360                                         | 136                       |
| FS LP 6 1/2" 750 (E)    | 5.60     | 6.55     | 0.161                                    | 0.136                                    | 5.14            | 750                                                       | 2,912                                | 2,475                                     | 19,320                                         | 159                       |
| FS LP 6 1/2" 750 (X)    | 5.60     | 6.55     | 0.161                                    | 0.136                                    | 5.14            | 750                                                       | 2,912                                | 2,184                                     | 19,320                                         | 159                       |
| <b>1,500 Series</b>     |          |          |                                          |                                          |                 |                                                           |                                      |                                           |                                                |                           |
| FS LPJ 2 1/2" 1,500 (E) | 1.90     | 2.51     | 0.111                                    | 0.094                                    | 1.23            | 1,500                                                     | 5,663                                | 4,814                                     | 4,760                                          | 58                        |
| FS LPJ 2 1/2" 1,500 (X) | 1.89     | 2.48     | 0.095                                    | 0.080                                    | 1.12            | 1,500                                                     | 4,838                                | 3,629                                     | 4,000                                          | 57                        |
| FS LPJ 3 1/2" 1,500 (E) | 2.82     | 3.60     | 0.163                                    | 0.138                                    | 2.35            | 1,500                                                     | 5,642                                | 4,796                                     | 10,200                                         | 85                        |
| FS LPJ 3 1/2" 1,500 (X) | 2.82     | 3.57     | 0.134                                    | 0.114                                    | 2.18            | 1,500                                                     | 4,656                                | 3,492                                     | 8,440                                          | 84                        |
| FS LPJ 4 1/2" 1,500 (E) | 3.75     | 4.68     | 0.213                                    | 0.181                                    | 3.82            | 1,500                                                     | 5,589                                | 4,751                                     | 17,600                                         | 112                       |
| FS LPJ 4 1/2" 1,500 (X) | 3.75     | 4.68     | 0.180                                    | 0.152                                    | 3.61            | 1,500                                                     | 4,661                                | 3,496                                     | 14,880                                         | 112                       |
| FS LPJ 6" 1,500 (E)     | 4.52     | 5.62     | 0.218                                    | 0.185                                    | 5.20            | 1,500                                                     | 4,715                                | 4,008                                     | 22,040                                         | 135                       |
| FS LPJ 6" 1,500 (X)     | 4.52     | 5.62     | 0.218                                    | 0.185                                    | 5.20            | 1,500                                                     | 4,715                                | 3,536                                     | 22,040                                         | 135                       |
| FS LPJ 6 1/2" 1,500 (E) | 5.60     | 6.90     | 0.270                                    | 0.230                                    | 7.71            | 1,500                                                     | 4,718                                | 4,010                                     | 33,760                                         | 167                       |
| FS LPJ 6 1/2" 1,500 (X) | 5.60     | 6.90     | 0.270                                    | 0.230                                    | 7.71            | 1,500                                                     | 4,718                                | 3,539                                     | 33,760                                         | 167                       |
| <b>2,500 Series</b>     |          |          |                                          |                                          |                 |                                                           |                                      |                                           |                                                |                           |
| FS LPJ 3 1/2" 2,500 (E) | 2.03     | 2.86     | 0.176                                    | 0.150                                    | 1.92            | 2,500                                                     | 7,971                                | 6,775                                     | 8,480                                          | 66                        |
| FS LPJ 3 1/2" 2,500 (X) | 3.05     | 4.18     | 0.261                                    | 0.222                                    | 4.02            | 2,500                                                     | 7,893                                | 6,709                                     | 18,880                                         | 99                        |
| <b>2,250 Series</b>     |          |          |                                          |                                          |                 |                                                           |                                      |                                           |                                                |                           |
| FS LPJ 4 1/2" 2,250 (E) | 3.57     | 4.79     | 0.284                                    | 0.241                                    | 5.06            | 2,250                                                     | 7,411                                | 6,299                                     | 23,800                                         | 115                       |

<sup>1</sup>Pressure ratings are based on minimum 20-year service life using ASTM D2992 long-term test procedures. Recommended maximum operating pressure is Fiberspar recommendation for general oilfield water, low-vapor pressure hydrocarbon, and multi-phase service conditions at the maximum rated temperature. Consult Fiberspar for a recommended maximum pressure rating for other service conditions.

E = High-density polyethylene (HDPE) rated from -29°F to 140°F

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