

# Heat Trace Tubing

## TST Series

### Features

- ⦿ Steam trace
- ⦿ Materials: stainless steel or copper process tube and tracer tube, fibrous glass insulation, PVC or TPU jacket
- ⦿ Sizes: process and tracer tube: 1/4" to 1/2", 6 to 14 mm
- ⦿ Maintains process temperature from 50°F to 355°F (10°C to 179°C)
- ⦿ For use with FITOK 6D series tube fittings, 4:1 safety factor for tubing and connection part of fitting and tubing
- ⦿ Marked with brand, and ordering number



### Materials of Process Tube and Tracer Tube

| UNS               | Grade        | ASTM Standard | FITOK Designator | Composition %       |       |       |         |      | Mechanical Properties |                      |              |          |
|-------------------|--------------|---------------|------------------|---------------------|-------|-------|---------|------|-----------------------|----------------------|--------------|----------|
|                   |              |               |                  | C                   | Cr    | Ni    | Mo      | Cu   | Yield Strength MPa    | Tensile Strength MPa | Elongation % | Hardness |
| S31600/<br>S31603 | 316/<br>316L | A269          | SS               | ≤0.035 <sup>①</sup> | 16-18 | 10-14 | 2.0-3.0 | -    | ≥205                  | ≥515                 | ≥35          | ≤80HRB   |
| C12200            | -            | B75           | CU               | -                   | -     | -     | -       | 99.9 | ≥62                   | ≥205                 | -            | -        |

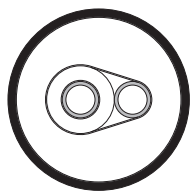
① The carbon content of tubing with outside diameter smaller than 1/2" or wall thickness smaller than 0.049" is allowed up to 0.04%.

### PVC Jacket

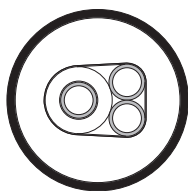
|                               |                     |
|-------------------------------|---------------------|
| Min. Tensile Strength         | 1530 psig (105 bar) |
| Min. Elongation               | 300%                |
| Shore Hardness                | 80 HA               |
| Max. Working Temperature      | 194°F (90°C)        |
| Min. Installation Temperature | -31°F (-35°C)       |
| Min. Working Temperature      | -31°F (-35°C)       |
| Resistance to Chloride        | Yes                 |
| Max. Water Absorption         | 0.06%               |

### Types

#### Light Heat Trace

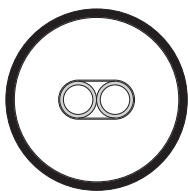


One Process Tube

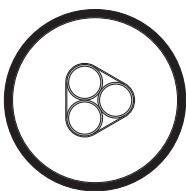


Two Process Tubes

#### Heavy Heat Trace



One Process Tube



Two Process Tubes

#### Temperature Maintenance Range

| Light Heat Trace                | Heavy Heat Trace                  |
|---------------------------------|-----------------------------------|
| 50°F to 200°F<br>(10°C to 93°C) | 200°F to 355°F<br>(93°C to 179°C) |

## Technical Data of Light Heat Trace

### Fractional

| Process Tube                       | Tracer Tube                        | Product O.D.<br>in.<br>±0.157 in. | Min.<br>Bend Radius<br>in. | Max. Coil Length <sup>①</sup><br>ft | Straight-<br>Length Tubing<br>ft |
|------------------------------------|------------------------------------|-----------------------------------|----------------------------|-------------------------------------|----------------------------------|
| Tube O.D. x Wall<br>Thickness, in. | Tube O.D. x Wall<br>Thickness, in. |                                   |                            |                                     |                                  |
| Process Tube and Tracer Tube       |                                    |                                   |                            |                                     |                                  |
| 1/4×0.035                          | 1/4×0.035                          | 1.65                              | 13.8                       | 1312                                | 20                               |
| 3/8×0.049                          | 3/8×0.049                          | 1.89                              |                            |                                     |                                  |
| 1/2×0.065                          | 1/2×0.065                          | 2.32                              |                            |                                     |                                  |
| Two Process Tubes and Tracer Tube  |                                    |                                   |                            |                                     |                                  |
| 1/4×0.035                          | 1/4×0.035                          | 1.65                              | 13.8                       | 984                                 | 20                               |
| 3/8×0.049                          | 3/8×0.049                          | 1.89                              |                            |                                     |                                  |
| 1/2×0.065                          | 1/2×0.065                          | 2.32                              |                            |                                     |                                  |

① Contact FITOK Group for more information.

### Metric

| Process Tube<br>Tube O.D. x Wall<br>Thickness, mm | Tracer Tube<br>Tube O.D. x Wall<br>Thickness, mm | Product O.D. mm<br>±4 mm | Min.<br>Bend Radius<br>mm | Max. Coil Length <sup>①</sup><br>m | Straight-<br>Length Tubing<br>m |
|---------------------------------------------------|--------------------------------------------------|--------------------------|---------------------------|------------------------------------|---------------------------------|
| Process Tube and Tracer Tube                      |                                                  |                          |                           |                                    |                                 |
| 6 × 1                                             | 6 × 1                                            | 41                       | 350                       | 400                                | 6                               |
| 8 × 1                                             | 8 × 1                                            | 45                       |                           |                                    |                                 |
| 10 × 1                                            | 10 × 1                                           | 49                       |                           |                                    |                                 |
| 12 × 1                                            | 12 × 1                                           | 57                       |                           |                                    |                                 |
| 14 × 2                                            | 14 × 2                                           | 61                       | /                         | /                                  |                                 |
| Two Process Tubes and Tracer Tube                 |                                                  |                          |                           |                                    |                                 |
| 6 × 1                                             | 6 × 1                                            | 41                       | 350                       | 300                                | 6                               |
| 8 × 1                                             | 8 × 1                                            | 45                       |                           |                                    |                                 |
| 10 × 1                                            | 10 × 1                                           | 49                       |                           |                                    |                                 |
| 12 × 1                                            | 12 × 1                                           | 57                       |                           |                                    |                                 |
| 14 × 2                                            | 14 × 2                                           | 61                       | /                         | /                                  |                                 |

① Contact FITOK Group for more information.

## Technical Data of Heavy Heat Trace

### Fractional

| Process Tube<br>Tube O.D. x Wall<br>Thickness, in. | Tracer Tube<br>Tube O.D. x Wall<br>Thickness, in. | Product O.D.<br>in.<br>±0.157 in. | Min.<br>Bend Radius<br>in. | Max. Coil Length ①<br>ft | Straight-<br>Length Tubing<br>ft |
|----------------------------------------------------|---------------------------------------------------|-----------------------------------|----------------------------|--------------------------|----------------------------------|
| Process Tube and Tracer Tube                       |                                                   |                                   |                            |                          |                                  |
| 1/4×0.035                                          | 1/4×0.035                                         | 1.65                              | 13.8                       | 1312                     | 20                               |
| 3/8×0.049                                          | 3/8×0.049                                         | 1.89                              |                            |                          |                                  |
| 1/2×0.065                                          | 1/2×0.065                                         | 2.32                              |                            |                          |                                  |
| Two Process Tubes and Tracer Tube                  |                                                   |                                   |                            |                          |                                  |
| 1/4×0.035                                          | 1/4×0.035                                         | 1.65                              | 13.8                       | 984                      | 20                               |
| 3/8×0.049                                          | 3/8×0.049                                         | 1.89                              |                            |                          |                                  |
| 1/2×0.065                                          | 1/2×0.065                                         | 2.32                              |                            |                          |                                  |

① Contact FITOK Group for more information.

### Metric

| Process Tube<br>Tube O.D. x Wall<br>Thickness, mm | Tracer Tube<br>Tube O.D. x Wall<br>Thickness, mm | Product O.D. mm<br>±4 mm | Min.<br>Bend Radius<br>mm | Max. Coil Length<br>m <sup>①</sup> | Straight-<br>Length Tubing<br>m |
|---------------------------------------------------|--------------------------------------------------|--------------------------|---------------------------|------------------------------------|---------------------------------|
| Process Tube and Tracer Tube                      |                                                  |                          |                           |                                    |                                 |
| 6×1                                               | 6×1                                              | 41                       | 350                       | 400                                | 6                               |
| 8×1                                               | 8×1                                              | 45                       |                           |                                    |                                 |
| 10×1                                              | 10×1                                             | 49                       |                           |                                    |                                 |
| 12×1                                              | 12×1                                             | 57                       |                           |                                    |                                 |
| 14×2                                              | 14×2                                             | 61                       | /                         | /                                  |                                 |
| Two Process Tubes and Tracer Tube                 |                                                  |                          |                           |                                    |                                 |
| 6×1                                               | 6×1                                              | 41                       | 350                       | 300                                | 6                               |
| 8×1                                               | 8×1                                              | 45                       |                           |                                    |                                 |
| 10×1                                              | 10×1                                             | 49                       |                           |                                    |                                 |
| 12×1                                              | 12×1                                             | 57                       |                           |                                    |                                 |
| 14×2                                              | 14×2                                             | 61                       | /                         | /                                  |                                 |

① Contact FITOK Group for more information.

### Working Pressure

Refer to the working pressure of TMP series tubing.

## Ordering Information

### Fractional

Refer to Part Number Description to get a complete ordering number.

| Process Tube                      | Process Tube | Tracer Tube                     | Ordering Number              |                              |
|-----------------------------------|--------------|---------------------------------|------------------------------|------------------------------|
| Tube O.D. x Wall Thickness, in.   | Material     | Tube O.D. x Wall Thickness, in. | Light Heat Trace             | Heavy Heat Trace             |
| Process Tube and Tracer Tube      |              |                                 |                              |                              |
| 1/4 × 0.035                       | 316/316L     | 1/4 × 0.035                     | SS-TST-L2-4035-SS4035-□-□-□□ | SS-TST-H2-4035-SS4035-□-□-□□ |
| 3/8 × 0.049                       | C12200       | 3/8 × 0.049                     | CU-TST-L2-6049-SS6049-□-□-□□ | CU-TST-H2-6049-SS6049-□-□-□□ |
| Two Process Tubes and Tracer Tube |              |                                 |                              |                              |
| 1/4 × 0.035                       | 316/316L     | 1/4 × 0.035                     | SS-TST-L3-4035-SS4035-□-□-□□ | SS-TST-H3-4035-SS4035-□-□-□□ |
| 3/8 × 0.049                       | C12200       | 3/8 × 0.049                     | CU-TST-L3-6049-SS6049-□-□-□□ | CU-TST-H3-6049-SS6049-□-□-□□ |

### Metric

Refer to Part Number Description to get a complete ordering number.

| Process Tube                      | Process Tube | Tracer Tube                   | Ordering Number                    |                                    |
|-----------------------------------|--------------|-------------------------------|------------------------------------|------------------------------------|
| Tube O.D. x Wall Thickness mm     | Material     | Tube O.D. x Wall Thickness mm | Light Heat Trace                   | Heavy Heat Trace                   |
| Process Tube and Tracer Tube      |              |                               |                                    |                                    |
| 6 × 1                             | 316/316L     | 6 × 1                         | SS-TST-L2-6MM1.0-SS6MM1.0-□-□-□□   | SS-TST-H2-6MM1.0-SS6MM1.0-□-□-□□   |
| 10 × 1                            | C12200       | 10 × 1                        | CU-TST-L2-10MM1.0-SS10MM1.0-□-□-□□ | CU-TST-H2-10MM1.0-SS10MM1.0-□-□-□□ |
| Two Process Tubes and Tracer Tube |              |                               |                                    |                                    |
| 6 × 1                             | 316/316L     | 6 × 1                         | SS-TST-L3-6MM1.0-SS6MM1.0-□-□-□□   | SS-TST-H3-6MM1.0-SS6MM1.0-□-□-□□   |
| 10 × 1                            | C12200       | 10 × 1                        | CU-TST-L3-10MM1.0-SS10MM1.0-□-□-□□ | CU-TST-H3-10MM1.0-SS10MM1.0-□-□-□□ |

① Standard length: 20 ft and 6 m

② S31600/S31603 material jacketed tubing is ordered in the same way as TCT series coiled tubing, for different lengths see Ordering Information of TCT series.

Ordering Number Description

SS - TST - L2 - 6035 - SS6035 - U - W - 6M

| Process Tube Material    |        | Type             | Tube Quantity    | Process Tube O.D.        | Process Tube Wall Thickness | Tracer Tube Material | Tracer Tube O.D. | Tracer Tube Wall Thickness | Jacket Material | Jacket Color | Length                                                |
|--------------------------|--------|------------------|------------------|--------------------------|-----------------------------|----------------------|------------------|----------------------------|-----------------|--------------|-------------------------------------------------------|
| SS 316/316L<br>CU C12200 | L<br>H | Light Heat Trace | 2<br>2 pcs Tubes | Fractional<br>4 1/4"     | Metric<br>6MM               | SS 316/316L          | Fractional<br>4  | Metric<br>6mm              | PVC             | Black        | xxM                                                   |
|                          |        | Heavy Heat Trace | 3<br>3 pcs Tubes |                          |                             |                      |                  |                            |                 |              | Length xx m (Except For Random Length Coiled Tubing)  |
|                          |        |                  |                  | Fractional<br>5 5/16"    | Metric<br>8MM               |                      | 5                | 8mm                        | TPU             | White        | xxF                                                   |
|                          |        |                  |                  |                          |                             |                      |                  |                            |                 |              | Length xx ft (Except For Random Length Coiled Tubing) |
|                          |        |                  |                  | Fractional<br>6 3/8"     | Metric<br>10MM              |                      | 6                | 10mm                       |                 |              | CL11F                                                 |
|                          |        |                  |                  |                          |                             |                      |                  |                            |                 |              | Random Length Grade CL11F (For Coiled Tubing Only)    |
|                          |        |                  |                  | Fractional<br>8 1/2"     | Metric<br>12MM              |                      | 8                | 12mm                       |                 |              | CL11M                                                 |
|                          |        |                  |                  |                          |                             |                      |                  |                            |                 |              | Random Length Grade CL11M (For Coiled Tubing Only)    |
|                          |        |                  |                  | Fractional<br>14MM       | Metric<br>14mm              |                      |                  |                            |                 |              | CL21F                                                 |
|                          |        |                  |                  |                          |                             |                      |                  |                            |                 |              | Random Length Grade CL21F (For Coiled Tubing Only)    |
|                          |        |                  |                  | Fractional<br>028 0.028" | Metric<br>0.8 mm            |                      | 028              | 0.8 mm                     |                 |              | CL21M                                                 |
|                          |        |                  |                  |                          |                             |                      |                  |                            |                 |              | Random Length Grade CL21M (For Coiled Tubing Only)    |
|                          |        |                  |                  | Fractional<br>035 0.035" | Metric<br>1.0 mm            |                      | 035              | 1.0 mm                     |                 |              | CL31F                                                 |
|                          |        |                  |                  |                          |                             |                      |                  |                            |                 |              | Random Length Grade CL31F (For Coiled Tubing Only)    |
|                          |        |                  |                  | Fractional<br>049 0.049" | Metric<br>1.2 mm            |                      | 049              | 1.2 mm                     |                 |              | CL31M                                                 |
|                          |        |                  |                  |                          |                             |                      |                  |                            |                 |              | Random Length Grade CL31M (For Coiled Tubing Only)    |
|                          |        |                  |                  | Fractional<br>065 0.065" | Metric<br>1.5 mm            |                      | 065              | 1.5 mm                     |                 |              | CL41F                                                 |
|                          |        |                  |                  |                          |                             |                      |                  |                            |                 |              | Random Length Grade CL41F (For Coiled Tubing Only)    |
|                          |        |                  |                  | Fractional<br>083 0.083" | Metric<br>1.8 mm            |                      | 083              | 1.8 mm                     |                 |              | CL41M                                                 |
|                          |        |                  |                  |                          |                             |                      |                  |                            |                 |              | Random Length Grade CL41M (For Coiled Tubing Only)    |
|                          |        |                  |                  | Fractional<br>2.0 2.0 mm | Metric<br>2.0 mm            |                      |                  |                            |                 |              |                                                       |
|                          |        |                  |                  |                          |                             |                      |                  |                            |                 |              |                                                       |
|                          |        |                  |                  | Fractional<br>2.2 2.2 mm | Metric<br>2.2 mm            |                      |                  |                            |                 |              |                                                       |
|                          |        |                  |                  |                          |                             |                      |                  |                            |                 |              |                                                       |
|                          |        |                  |                  | Fractional<br>2.5 2.5 mm | Metric<br>2.5 mm            |                      |                  |                            |                 |              |                                                       |
|                          |        |                  |                  |                          |                             |                      |                  |                            |                 |              |                                                       |

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available. For any questions, please contact FITOK Group or our authorized distributors.