



STOURFLEX®

J & P Supplies Ltd

Expansion Joints & Pipeline Equipment

Thermal Expansion.

Examples of rates of expansion over a temperature range of 0 °C to 82 °C

Steel Pipe
Copper Pipe
Stainless Steel Pipe
Plastic Pipe

0.91 mm/metre of pipe
1.38 mm/metre of pipe
1.35 mm/metre of pipe
up to 10mm/metre

EXPANSION OF PIPE IN MILLIMETRE PER METRE

| Temperature °C | Equivalent Saturated Steam Pressure bar | Steel Pipe | Stainless Steel Pipe | Cast Iron | Copper Pipe |
|----------------|---|------------|----------------------|-----------|-------------|
| -20 | | -0.20 | -0.31 | -0.20 | -0.33 |
| -10 | | -0.10 | -0.15 | -0.10 | -0.16 |
| 0 | | 0 | 0 | 0 | 0 |
| 10 | | 0.10 | 0.15 | 0.10 | 0.16 |
| 20 | | 0.20 | 0.31 | 0.20 | 0.33 |
| 30 | | 0.32 | 0.51 | 0.30 | 0.50 |
| 40 | | 0.43 | 0.65 | 0.40 | 0.67 |
| 50 | | 0.55 | 0.81 | 0.50 | 0.84 |
| 60 | | 0.66 | 0.98 | 0.60 | 1.01 |
| 70 | | 0.78 | 1.15 | 0.70 | 1.18 |
| 80 | | 0.89 | 1.32 | 0.81 | 1.35 |
| 90 | | 1.01 | 1.49 | 0.92 | 1.52 |
| 100 | 0 | 1.13 | 1.66 | 1.03 | 1.69 |
| 110 | 0.43 | 1.24 | 1.83 | 1.14 | 1.86 |
| 120 | 0.97 | 1.36 | 2.00 | 1.25 | 2.03 |
| 130 | 1.70 | 1.47 | 2.17 | 1.37 | 2.20 |
| 140 | 2.60 | 1.59 | 2.34 | 1.48 | 2.39 |

| Temperature °C | Equivalent Saturated Steam Pressure bar | Steel Pipe | Stainless Steel Pipe | Cast Iron | Copper Pipe |
|----------------|---|------------|----------------------|-----------|-------------|
| 150 | 3.75 | 1.71 | 2.52 | 1.60 | 2.57 |
| 160 | 5.17 | 1.83 | 2.69 | 1.71 | 2.75 |
| 170 | 6.91 | 1.95 | 2.87 | 1.83 | 2.92 |
| 180 | 9.01 | 2.08 | 3.01 | 1.95 | 3.10 |
| 190 | 11.55 | 2.20 | 3.23 | 2.06 | 3.28 |
| 200 | 14.55 | 2.32 | 3.41 | 2.17 | 3.46 |
| 210 | 18.05 | 2.45 | 3.59 | 2.30 | 3.63 |
| 220 | 22.15 | 2.57 | 3.78 | 2.42 | 3.81 |
| 230 | 27.00 | 2.70 | 3.96 | 2.55 | 3.98 |
| 240 | 32.50 | 2.82 | 4.14 | 2.68 | 4.16 |
| 250 | 38.70 | 2.95 | 4.32 | 2.80 | 4.34 |
| 260 | 46.00 | 3.07 | 4.50 | 2.93 | 4.51 |
| 270 | | 3.20 | 4.68 | 3.06 | 4.69 |
| 280 | | 3.33 | 4.87 | 3.19 | 4.87 |
| 290 | | 3.46 | 5.06 | 3.32 | 5.04 |
| 300 | | 3.59 | 5.24 | 3.45 | 5.22 |