## Deflection Gauges

Deflection Gauges (mandrels) are used to test flexible sewer pipe for out-of-roundness or deflection per ASTM specifications D3034 and F679. This testing ensures that flexible pipe has been properly bedded and backfilled (ASTM D2321) to give optimal performance.

Both steel and aluminum gauges utilize a nine arm design to ensure the pipe is tested accurately. This design also allows gravel and debris to easily pass through. Other gauges can get hung up - causing a deflection test to fail, even though the pipe is within tolerance. Sized to $.01^{\prime \prime}$, both deflection gauge styles meet ASTM requirements.


ASTM Specification D3034 (4" - 15")

| Nominal <br> Size | Pipe | Average ID | Base ID* | $\mathbf{5 \%} \%$ <br> Deflection | $\mathbf{7 . 5 \%}$ <br> Deflection |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $4^{\prime \prime}$ | SDR 35 | 3.965 | 3.895 | 3.70 | 3.60 |
| 6 " | SDR 26 | 5.764 | 5.612 | 5.33 | 5.19 |
| $6^{\prime \prime}$ | SDR 35 | 5.893 | 5.742 | 5.46 | 5.31 |
| $8^{\prime \prime}$ | SDR 26 | 7.715 | 7.488 | 7.11 | 6.93 |
| 8 " | SDR 35 | 7.891 | 7.665 | 7.28 | 7.09 |
| $10^{\prime \prime}$ | SDR 26 | 9.644 | 9.342 | 8.87 | 8.64 |
| $10^{\prime \prime}$ | SDR 35 | 9.864 | 9.563 | 9.08 | 8.84 |
| $12^{\prime \prime}$ | SDR 26 | 11.480 | 11.102 | 10.55 | 10.27 |
| $12^{\prime \prime}$ | SDR 35 | 11.737 | 11.361 | 10.79 | 10.51 |
| $15^{\prime \prime}$ | SDR 26 | 14.053 | 13.575 | 12.90 | 12.56 |
| $15^{\prime \prime}$ | SDR 35 | 14.374 | 13.898 | 13.20 | 12.86 |

*Base Inside Diameter (Base ID) - Allows for out of roundness and wall thickness tolerances as defined by ASTM standards.


Deflection Test


ASTM Specification F679 (18" - 27")

| Nominal Size | Pipe | Average ID | Base ID* | $\begin{gathered} 5 \% \\ \text { Deflection } \end{gathered}$ | $\begin{gathered} 7.5 \% \\ \text { Deflection } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 18" | SDR 26 | 17.177 | 16.586 | 15.76 | 15.34 |
| $18^{\prime \prime}$ | SDR 35 | 17.564 | 16.976 | 16.13 | 15.70 |
| 21" | SDR 26 | 20.249 | 19.545 | 18.57 | 18.08 |
| 211 | SDR 35 | 20.707 | 20.004 | 19.00 | 18.50 |
| 24 " | SDR 26 | 22.781 | 21.964 | 20.87 | 20.32 |
| $24 "$ | SDR 35 | 23.296 | 22.481 | 21.36 | 20.79 |
| $27{ }^{\prime \prime}$ | SDR 26 | 25.674 | 24.744 | 23.51 | 22.89 |
| $27{ }^{\prime \prime}$ | SDR 35 | 26.258 | 25.327 | 24.06 | 23.43 |

## Air-Loc ${ }^{\circledR}$ Line Stringer

- Strings lines between manholes quickly
- Use lines to pull deflection gauges


## See page 50

