

USING SCIDS TO ACCURATELY MEASURE PIPE DIAMETER

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Accurate measurement of pipe diameter is one of the most critical steps in cured-in-place pipe (CIPP) lining and rehabilitation. A common industry mistake is relying on assumptions or outdated drawings, which often leads to selecting the wrong liner size. The SCIDS method provides a reliable, visual, and repeatable approach to determining internal pipe diameter, ensuring proper liner selection and installation.

What are SCIDS?

SCIDS is an acronym that represents the purpose and benefits of the measuring system:

S – Sizing: Ensuring the interior diameter is correctly identified

C – Cleaning: Supporting better liner formation (and easier bladder/calibration retrieval)

I – Identification: Marking key locations (such as fittings, where to start and stop, and transitions)

D – Drainage

S – Systems

These systems provide a structured way to verify pipe dimensions while also supporting quality installations and outcomes.

Why Accurate Pipe Measurement Matters

One of the most frequent causes of installation failure is assuming the pipe diameter rather than verifying it. Pipes often vary due to age, installation inconsistencies, or undocumented repairs. Installing the wrong liner size can create significant problems:

Undersized liner: Often repairable but may not provide optimal structural performance

Oversized liner: Much more serious, potentially causing:

- Bladder/calibration entrapment during installation
- Wrinkles, fins, or ridges in the liner
- Flow restrictions (due to material folding)

For these reasons, best practice dictates:

1. Always measure the pipe throughout the repair section
2. Never rely on verbal confirmation of pipe size
3. Never rely solely on drawings or historical data

SCIDS Measurement Method

The SCIDS method involves physically inserting a flexible measuring device of known diameter into the pipe and verifying its fit using a camera system.

Step-by-Step Process

1. Select a SCID of Known Diameter

The SCID is constructed to a fixed size, allowing it to act as a reference gauge.

2. Insert the SCID into the Pipe

Push or pull the SCID through the pipe while monitoring progress.

3. Use a Camera for Visual Confirmation

A second camera must follow the SCID to provide a clear view of its relationship to the pipe walls. Relying only on feel or friction is not acceptable.

4. Interpret the Fit

- If the SCID folds inward, the pipe diameter is smaller than the SCID
- If the SCID does not contact the pipe walls, the pipe is larger than the SCID
- If the SCID fits snugly and evenly, the diameter is correctly matched

5. Adjust SCID Size and Repeat

Switch to a larger or smaller SCID to confirm the exact pipe diameter.

This iterative approach ensures high confidence in measured dimensions.

Materials Required for SCIDS

Constructing a SCID is simple and cost-effective. Required materials include:

- 3/8-inch plastic supply line, approximately 18 inches long
- #14 x 3/4-inch pan head Phillips screw
- Wide plastic zip ties (with or without holes)

Important considerations:

- Do not trim the supply line below 18 inches; adequate length ensures visibility and flexibility
- Use wide zip ties for stability and consistent shape

These materials are assembled into a flexible, star-shaped or radial measuring device that can compress or expand slightly to indicate pipe size.

Key Best Practices

To maximize accuracy and avoid costly mistakes, follow these best practices when using SCIDS:

1. Always Use Visual Verification

The most critical rule is to visually confirm the SCID position using a camera. Friction or resistance alone is unreliable and can lead to incorrect conclusions.

2. Measure Multiple Points

Pipes may not have a consistent diameter along their length. Measure at several locations, especially near transitions or repairs.

3. Use Multiple SCID Sizes

Start with an estimated size, then refine using larger or smaller SCIDs until the correct fit is confirmed.

4. Document Results

Capture video or still images during inspection to validate measurements and support installation planning.

5. Integrate with Cleaning and Inspection

SCIDS can be used alongside cleaning operations to ensure that debris or scale does not affect measurement accuracy.



Practical Value in Pipe Rehabilitation

Using SCIDS significantly reduces the risk of liner installation failures and improves overall project outcomes.

By ensuring proper liner sizing, contractors can:

- Avoid costly removals or reinstallation
- Improve liner structural performance
- Reduce installation time and complications
- Ensure proper flow characteristics in rehabilitated pipes

In modern trenchless rehabilitation, where precision is essential, SCIDS offers a simple yet highly effective solution for accurate pipe meas

Conclusion

The SCIDS method is an industry-proven approach for measuring pipe diameters in preparation for lining and repair. By combining a physical measuring device with real-time camera verification, it eliminates guesswork and ensures reliable results. Given the risks associated with incorrect liner sizing, SCIDS should be considered a standard practice in any professional pipe rehabilitation project.

Ultimately, the guiding principle remains clear: *measure accurately, verify visually, and never rely on assumptions.*

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