



CSI: DIVISION: 22 00 00—PLUMBING
Section: 22 13 16—Sanitary Waste and Vent Piping

Product certification system:

The ICC-ES product certification system includes testing samples taken from the market or supplier's stock, or a combination of both, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the supplier's quality system.

Product: IPT® CIPP Lining System

Listee: Internal Pipe Technologies (IPT)
1001 Energy Dr.
Abilene TX 79602

Compliance with the following codes:

2021, 2018, 2015, 2012 and 2009 *International Plumbing Code*® (IPC)
2021, 2018, 2015, 2012 and 2009 *International Residential Code*® (IRC)
2021, 2018, 2015 and 2012 *Uniform Plumbing Code*® (UPC)*
2020, 2015 and 2010 *National Plumbing Code of Canada*® (NPC)**

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Compliance with the following standards:

ASTM F1216-2021, Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of Resin-Impregnated Tube, ASTM International.

NSF/ANSI 14-2021, Plastic Piping System Components and Related Materials, National Sanitation Foundation.

ICC-ES LC1011 (October 2010), PMG Listing Criteria for the Rehabilitation of Existing Building Drains and Building Sewers by the Inversion and Curing of Resin-impregnated Tube.

Identification:

IPT® CIPP Lining System; model number IPT-B100 & IPT-M102 Each container bears a label marked model number, with the manufacturer's name (IPT®), ICC-ES PMG listing mark. Each container is stamped on the top with the date of manufacture and the batch number.

Installation:

Installation must comply with the manufacturer's published installation instructions and the applicable codes.

The IPT® Cured-in-place pipe (CIPP) Lining System must be applied by installers trained and certified by IPT. The following steps comprise installation sequence

1. Determine the liner thickness, diameter and length needed for the pipe rehabilitation.
2. Cut the liner tube to the desired length.
3. Cut the rubber bladder 16 inches longer than the length of the liner tube.
4. Cut the plastic tube at least 56 inches longer than the length of the liner tube.
5. With pull-end and "air-fill" fitting attached to air hose, pull air hose through the rubber tube using string inside the rubber tube.
6. Secure rubber tube to pull-end with two band-it clamps and electrical tape.
7. From the other end of the rubber tube, pull air hose so it straight inside the rubber bladder; secure this end of the rubber tube to the air hose with two band-it clamps and electrical tape.
8. Inversion tank is prepared with the plastic tubing.
9. Scan one of the QR Codes on the liner to quickly and accurately provide to the installer, the weight of epoxy and catalyst needed for the length of the liner and thickness.
10. Weigh into a clean mixing pail, the weight of Part A needed for the liner. Into the same pail with Part A, add the weight of Part B needed for the liner. Part A and B are mixed for approx. two minutes or until the mixture is homogeneous.
11. Immediately after mixing, pour the mixed epoxy into the liner tube.
12. Using two wet-out rollers, impregnate the liner tube with mixed epoxy by forcing the epoxy into the fabric material. This is done in small increments with rollers working towards each other. This will ensure the slug of epoxy is moved along the liner tube for proper impregnation. Squeeze the excess epoxy into plastic bag made of plastic tube.
13. Using the inversion tank, invert the plastic tube through the epoxy impregnated liner tube.
14. Cut the plastic tube at each end so it is 28" longer at each end of the liner tube. Do not cut the string.
15. Attach the string through the plastic tube to the pull-end and pull hose through the liner tube.
16. With electrical tape, attach the ends of the plastic tube to each end of the rubber tube
17. Fold liner and tape with low tack tape for easy insertion into pipe. Ensure the pull end is properly taped with low tack tape.
18. Install liner into place.
19. Connect air hose to compressor and inflate rubber tube. Set pressure gauge to 18psi.
20. After curing, deflate and pull rubber bladder with plastic tube using the air hose.
21. Perform a post CCTV inspection to ensure liner is properly installed. Record a video.
22. Pre-Cleaning, Pre-Lining and Post-Lining videos are part of the deliverables to the client.

Models:

IPT® Cured-in-place pipe (CIPP) Lining System: The system consists of components tested to comply with ASTM F1216 and NSF/ANSI 14. The material properties of the CIPP Lining system have been verified through testing with the result reported in Table 1. The system consists of the IPT-B100 and IPT-M102.

Table 1 – Material Properties of IPT® CIPP Lining System

Property Tested	Result (Average)
Tensile Strength (psi)	5,252
Tangent Modulus (psi)	437,600
Flexural Strength (psi)	6,668
Flexural Modulus (psi)	343,124

Conditions of listing:

1. The IPT® CIPP Lining System must be installed in accordance with this listing and the manufacturer’s published installation instructions. In the event of a conflict, the instructions in this listing govern.
2. The IPT® CIPP Lining System may be used to line pipe with minimum diameter of 2 inches (50 mm) to maximum diameter of 96 inches (2400 mm).
3. The rehabilitation of existing pipe by using IPT® CIPP Lining System is suitable to be used in a variety of gravity and pressure applications such as sanitary sewers, building drains, storm sewers, process piping, electrical conduits, and ventilation systems.
4. IPT® CIPP lining System are manufactured under a quality control program with annual inspection by ICC-ES.