



**INSTALLATION MANUAL**

---

**INSIGNIA™ HYDROPHILIC LARGE DIAMETER END  
SEAL  
18"-54"**

This document is Confidential Information developed and owned by LMK Technologies. This document is not intended for transmission to, or receipt by, any unauthorized persons. If you have received this document in error, please (i) do not read it, (ii) contact LMK Technologies at 1-815-433-1275 to inform LMK Technologies under what circumstance the message was received, and (iii) erase or destroy the document.

# INSTALLATION MANUAL FOR INSIGNIA™ HYDROPHILIC LARGE DIAMETER END SEAL

This document describes the procedure for installing an Insignia™ End Seal in a pipe before the installation of an ASTM F1216 compliant CIPP liner and is meant to be used in conjunction with Insignia™ Hydrophilic End Seal Installation Specification.

## The Insignia™ End Seal Kit contains the following materials:

1. Insignia™ Hydrophilic End Seal (Fig. 1)
2. Metal Retaining Ring (Fig. 2)
3. Screws (Fig. 3)
4. Tapcon Screw Bit (Fig. 4)



Fig. 1



Fig. 2



Fig. 3



Fig. 4

## For the installation of an Insignia™ Large Diameter End Seal, the procedure below must be followed:

1. The interior pipe surface is prepared by thoroughly cleaning it using a high pressure water jet.
2. The metal ring is bent and placed inside the Insignia™ End Seal (Fig. 5).
3. The Insignia™ End Seal is then inserted into the pipe such that the Metal Retaining Ring is on the leading edge of the seal. The End Seal is placed in the pipe such that the open end of the retaining ring is positioned at the 12'o clock location. The Seal should be positioned such that it is 12" away from the pipe edge (Fig. 6).



Fig. 5



Fig. 6

4. **Note:** It is very important that the Insignia™ End Seal be installed in such a way that the Metal Retaining Ring is positioned on the end of the seal through which the CIPP will be inverted (Fig. 8).
5. The provided screws are then drilled in to the middle of the slots provided in the retaining ring (Fig. 7). **Note:** The screws should be cinched but not tightened to allow movement of the End Seal Band when it is expanding. If the ring is positioned correctly, these screws should effectively be located at the 2 o'clock, 4 o'clock, 8 o'clock, and 10 o'clock. If the pipe being rehabilitated is clay, concrete or cast iron, the Tapcon screw bit should be used to pre-drill the holes into the pipe.



Fig. 7



Fig. 8

6. Once the CIPP Liner has been inverted through the pipe, the Insignia™ End Seal gets embedded between the lining and the host pipe.

**Copyright by LMK Technologies ©2014**

Patents:

8,240,340

8,240,341

8,567,451

8,636,036

8,561,145

8,640,737

Document #1120

Revised February 12, 2014