LINER TROUBLESHOOTING:

Stopped Inversions

APPLIED FELTS

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Causes: Inverting liners can stop inverting for a number of reasons. In any case, small diameter linings are more difficult to invert. Bends and other restrictions in the pipe may make inversion more likely to slow or stop.

It has been known, especially in larger, longer liners, for the resin to gel prematurely which, when reporting to the inversion face, causes the inversion to stop. This is the cause of the issue in Figure 1 below.

The seam area in particular has prematurely gelled which explains the straight piece of liner which protrudes from the inversion face. The felt has become embrittled by the area of hardened resin and, unable to sustain the temporary loads, has torn.

In Figure 2, the liquid resin is emerging from the inversion mouth. There appears to be a split in the inner layer on the lower right of the face.

Figure 1 :: Example of stuck inversion with coated layer apparently trying to invert through split inner, note the cured section of seam.

Figure 2 :: Example of stuck inversion with a split plain inner, or flame bonded across the inner layer.

Solutions: Ensure strict adherence to quality control procedures.

The careful monitoring of resin handling and mixing, and testing for gel time may help to identify non-conformance likely to result in premature curing. Ensure that sufficient inversion pressure is available especially with smaller diameter liners.