One of our utility clients asked us to assist in identifying the root cause for the multiple joint failures on a new airport feeder. Initial assessments with IMCORP’s Factory Grade® technology revealed several substandard cold shrink joints. The utility asked IMCORP and the manufacturer to provide dissection and root cause analysis.

The dissections and root cause analysis identified insufficient void filling compound, and joint body damage. These issues caused void and stress enhancements inside the joint. Voids and stress enhancements in the presence of sufficient voltage stress gives rise to partial discharge, erosion, electrical treeing and eventually failure.

The utility and manufacturer’s instructions explained to “lubricate the cable insulation up to the semi-con cutback”. The word lubricate likely misled the installers to thinking a thin coat of void filler would be sufficient when actually a thick bead is needed to fill the semi-con cutback step and eliminate interfacial voids.

The utility learned the value of a Factory Grade® assessment and information. By partnering with IMCORP our client utility gained Precision Reliability™ information about their airport circuit, their joint performance, and insights into enhancing their installation instructions and training.

**Fig 1&2 Insufficient blue void filler observed at the critically important semi-con cutback**