

Position Statement on The Use of Data Recorders

The use of data recorders has become increasingly popular as a perceived method of providing quality assurance for the fusion of polyethylene pipe. A data recorder typically employs the use of a pressure transducer and temperature measuring instrument, integrated with a programmable logic device, to sense and record fusion pressures, heater temperatures, and time cycles. It is the position of Connectra Fusion Technologies that data recorders can provide a reliable method for measuring and recording fusion machine conditions, but not joint quality.

There are many other conditions, not reportable by an automated device such as a data recorder, which can effect fusion joint integrity. Joint misalignment and contamination of pipe ends or heater surfaces are examples of these types of conditions. Additionally, ambient conditions such as temperature and wind can change in such a way that fusion procedures should be altered in order to provide optimal joint integrity. The same can be said about drag factor. Data recorders, in and of themselves, do not measure or sense such changes in conditions, and over-reliance on a data recorder as a quality assurance instrument may lead to a false assessment of fusion joint quality.

Careful human observation of traditional gauges, sensing devices, and the finished joint provides, in our opinion, a more cost effective and reliable method of ensuring joint fusion quality than can be ascertained through the use of data recorders. (This position is supported by the outstanding safety record of polyethylene pipe in the gas industry over the past 30 years, the vast majority of which was fused without the use of data recorders.) The use of data recorders, when combined with proper human oversight, provide an additional data point for fusion conditions, but at an extra cost (including capital investment, maintenance, calibration, and operation). Users of data recorders should be cautioned against complacency and over-reliance on data recorders, and should implement procedures to ensure data recorders are properly calibrated and programmed for the piece of equipment with which they are being used. Failure to do so could provide false and misleading data. Additionally, when data recorders are used, all quality assurance personnel should be fully trained in the use of both data recorders and traditional methods of quality assurance for fusion joint integrity.

In summary, Connectra believes that the best quality assurance for fusion remains the use of proper fusion procedures (as promulgated by the pipeline owner, operator, or pipe manufacturer, and verified by testing) and careful visual inspection of all completed joints by trained personnel. When cost is not an issue, the use of data recorders by a qualified technician should be seen as an additional verification of fusion machine parameters rather than as a measurement of fusion joint quality.