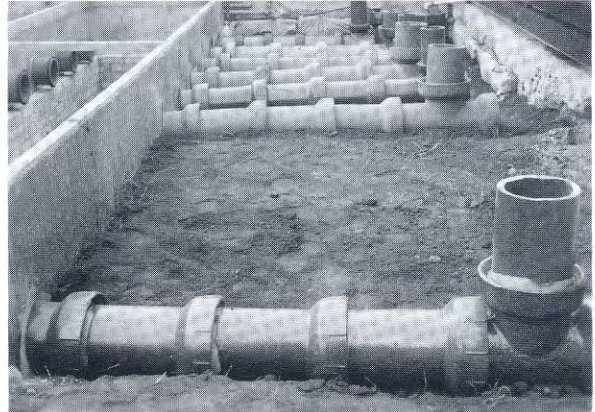


MODERN CLAY PIPE JOINTS: No Longer a Case of Leaks and Root Intrusion



NCPI Greenhouse built in 1960 to conduct accelerated Root Resistance Studies.



Test Pipe Installed to circulate nutrient rich effluent to attract roots.

Leaky joints were common from the earliest use of drainage pipe to convey waste. That in itself was not considered a problem. Why? Treatment of the effluent was very primitive or non-existent. Dilution was the only practical method of reducing the concentration of harmful substances before the sewage reached a stream or other bodies of water near the community. To achieve that dilution, joints that allowed ground water to enter into the pipeline were a benefit, not a problem. The adage of "**Dilution is the Solution to Pollution**" not only rhymed – it made perfect sense at that time.

As advanced methods of treatment became available, municipal leaders and the public soon became aware of the benefits of treated effluent. Clay pipe manufacturers assumed a leadership role as the need for improvement in joint systems became obvious. The National Clay Pipe Institute initiated research to identify appropriate materials and designs for the modern compression sewer pipe joint. As a result of this work, the precision engineered compression joint is the industry standard.

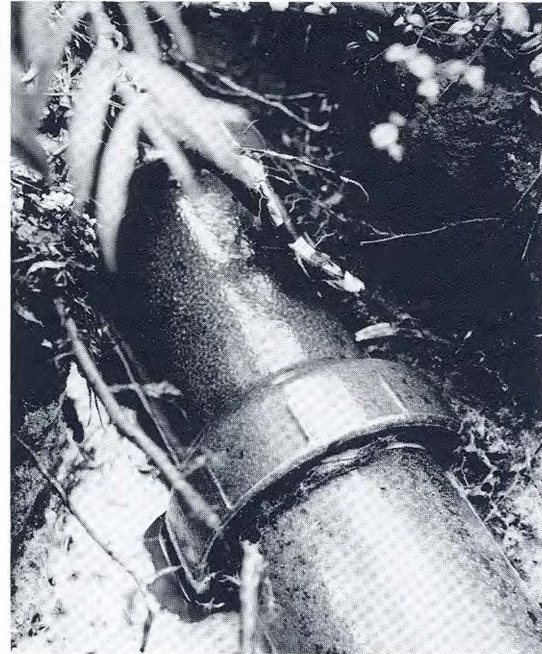
"**Joints shall not leak . . .**" This key requirement of today's clay pipe joints is found in paragraph 7.1.1 of ASTM C 425. This section of the specification states that the "**joints shall not leak**" when subjected to an internal ten-foot head of water for one hour under the following conditions:

- Straight Alignment
- Angular Deflection
- Shear Load

The End of Root Intrusion – An important benefit of eliminating joint leakage was the exclusion of roots. Roots have never demonstrated the ability to penetrate a properly assembled modern compression joint.

How well have we done? Winston Salem/Forsyth County Sewer District in North Carolina has decades of experience with the modern clay pipe joint. James Harris, Maintenance Supervisor for the District, is a leader in his field and televises every sewer line in the system at least once every ten years. Mr. Harris says, **“There is no documented case of root intrusion with the compression joint in the Winston Salem/Forsyth County sewer district. Almost the entire system is clay pipe.”** Many other municipalities can attest to these excellent results.

If you have seen pictures of clay pipe with roots or other signs of a leaky joint, chances are you are looking at a pipe with field-made joints. Those joints met the infiltration and inflow standards of the time but were not tight or root resistant.



NCPI Root Plot – Although root growth was extensive, the only penetration was a control line with cement mortar joints. None of the compression joints permitted any root intrusion. The test was terminated after twenty years.

CONCLUSION: Today's clay pipe compression joints meet or exceed today's ASTM requirements. Simply stated – **a good joint does not leak and both research and field experience demonstrate that root intrusions are a thing of the past. Isn't that what we all expect from today's pipe joint?**