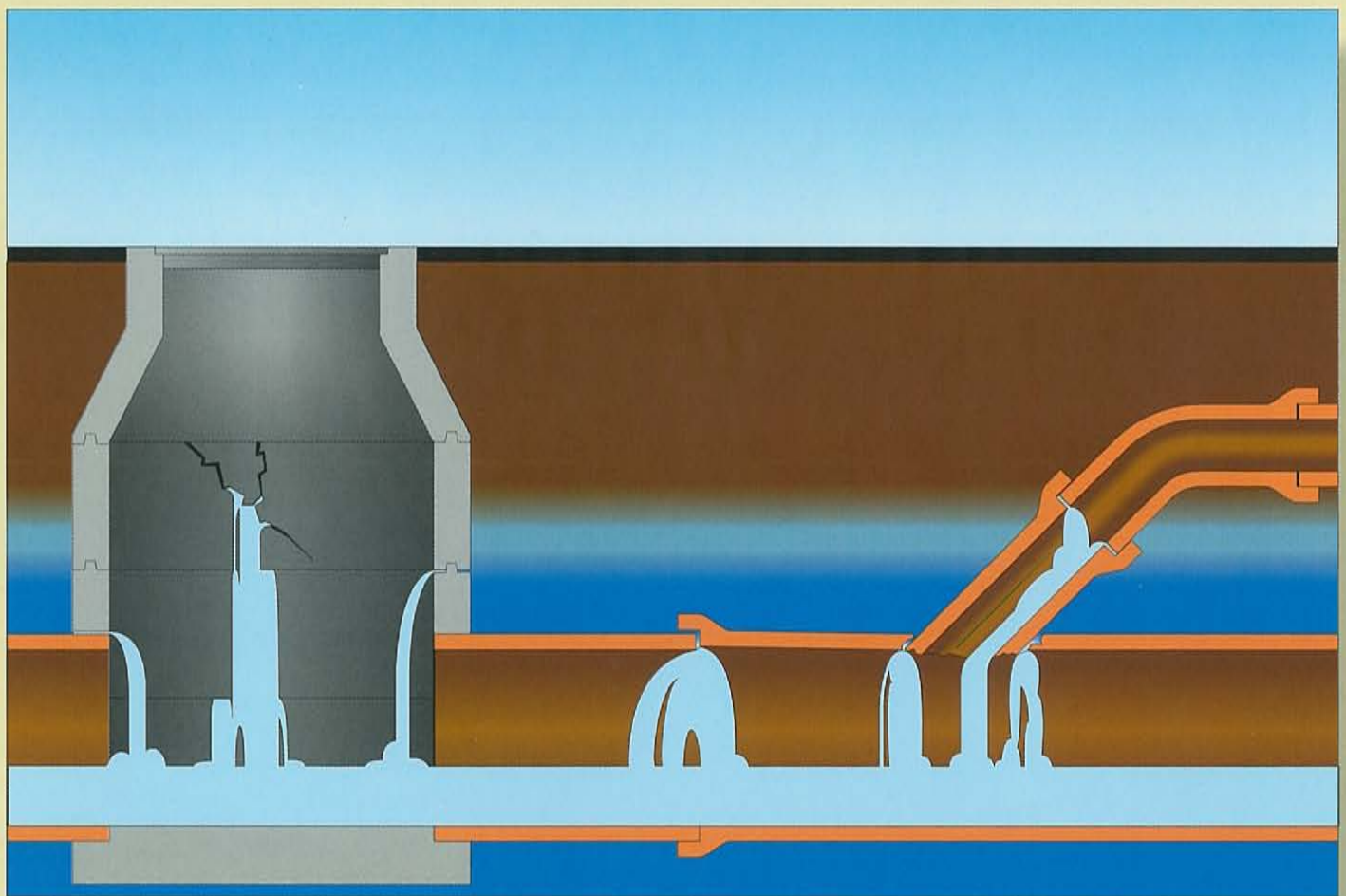


# Chemical Grout Stops Infiltration. Permanently.



In Manholes • Joints • Cracks •  
Service Lines and Connections



# Chemical grout is fast, sure,

Chemical grout was first developed and applied in 1955. Since that time it has been used to stop leaks in sewers, manholes, tanks, vaults, tunnels, and many other applications all over the world. Recent studies and over 40 years of experience indicate that America's first trenchless technology is still the best, most cost-effective, long-term defense against infiltration of groundwater into structurally sound sewer systems.

## **CHEMICAL GROUT FORMS A WATERPROOF COLLAR AROUND LEAKING PIPES AND MANHOLES**

Chemical grouts do not stop sewer leaks simply by filling joints and cracks. Instead, grouting chemicals are forced through joints and cracks and into the surrounding soil where they gel with the soil to form a waterproof mass which cannot be pushed back into the sewer system.

This water-tight collar adheres to the outer surface of the pipe of manhole where it will stay indefinitely unless removed by excavation or exposed to sunlight for long periods of time. If groundwater pressures increase, the collar will be pressed even more tightly against the structure, increasing its ability to stop leaks.

If the humidity in the soil declines for a long period, the grout may begin to dry, also. However, when the soil humidity returns, the grout will absorb moisture and return to its original condition. The soil humidity around leaking manholes and sewers is almost always high enough to prevent any significant shrinkage of the gel.

## **STOP LEAKS FIRST AT THE FOUR CRITICAL POINTS OF ENTRY**

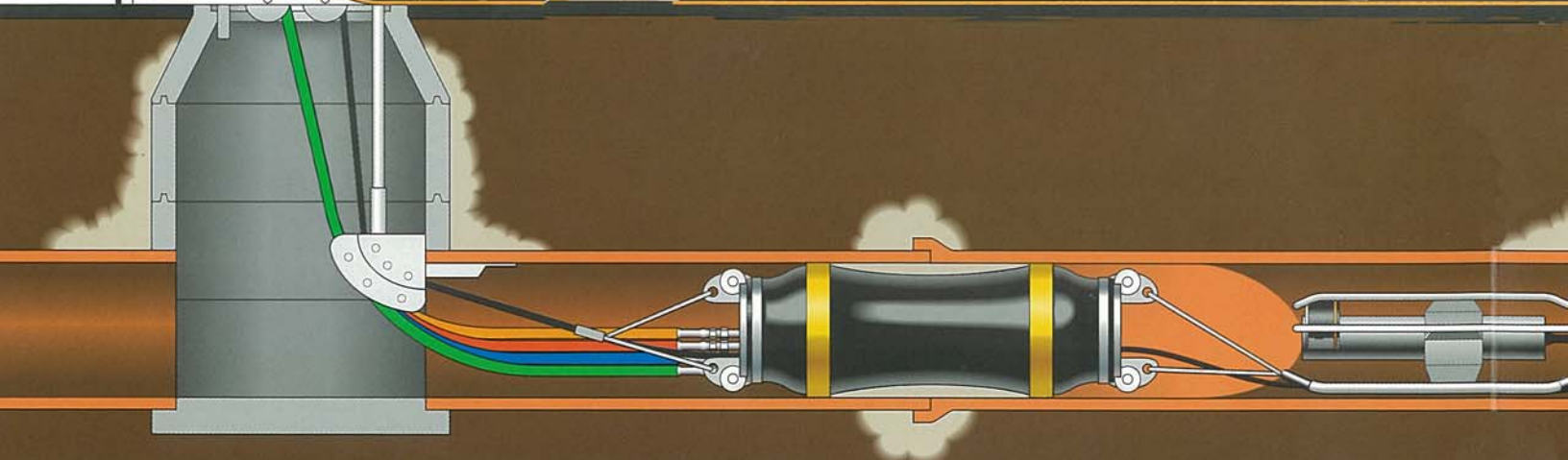
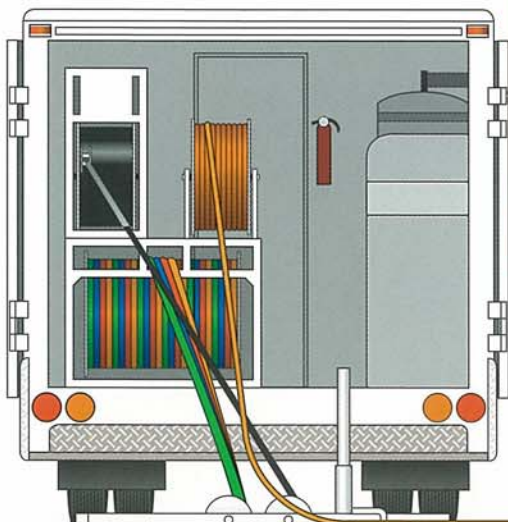
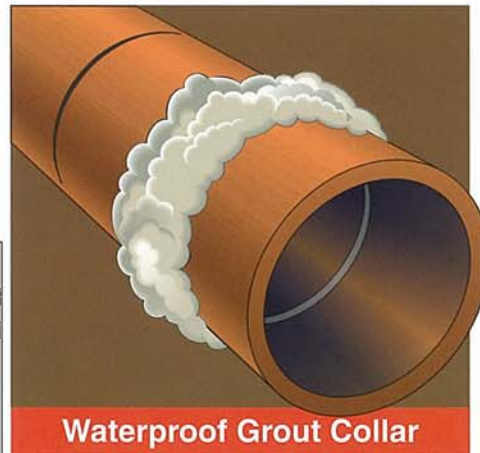
Most infiltration enters structurally sound sewer systems through joints, manholes, service connections, and the first few feet of the service lateral. The best and most economical way to stop these leaks is with chemical grout.

Chemical grouting usually costs less than ten dollars per foot for average residential lines. That makes it the least expensive rehabilitation method available, and it is also the least disruptive.

## **GROUT CAN STOP THE LEAKS OTHER PROCESSES MISS**

Many trenchless processes are available for structural rehabilitation of pipelines, manholes, and even service laterals, but they need chemical grout, also. A barrier of chemical grout on the outside of manholes will protect interior linings from hydrostatic pressure. Stopping leaks with chemical grout before cured-in-place linings are installed will prevent resin washout and result in much stronger pipes with more uniform wall thicknesses.

It is now recognized that full-length liners seldom reduce infiltration by more than 50%. Groundwater which cannot enter through joints and cracks can quickly migrate to service connections and manholes.





# economical, and proven

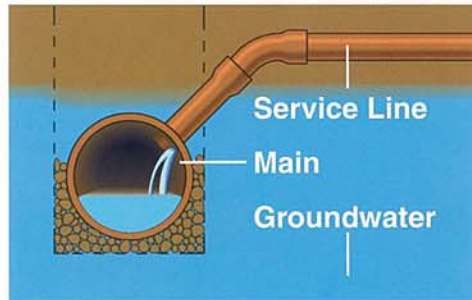
Sealing these potential entry points with chemical grout can stop leaks completely and allow you to realize the maximum benefit from your rehabilitation investment.

## **CHEMICAL GROUT ALLOWS SERVICE LINES TO BE SEALED COST-EFFECTIVELY**

Service laterals are often a source of significant infiltration but, without chemical grout, it is seldom cost-effective to stop the leaks. It usually costs less to treat the groundwater than to stop infiltration in these lines.

However, chemical grout is so economical and effective that a positive return on investment can be realized.

Studies have shown that most infiltration into service lines occurs within a few feet of the main. There are two primary reasons for this; all except the last few feet of service lines are usually above the water table, and groundwater flows easily in the backfill of a mainline trench because of the French drain effect.



## **CHEMICAL GROUT OFFERS A LONG-TERM SOLUTION TO ROOT INTRUSION**

Roots are often a costly, destructive intruder in sewer pipes. They can enter through microscopic openings, then quickly grow in size and strength. This growth can crack and move even the strongest pipes, leading to leaks which overload treatment plants, clog pipes with silt, and wash away essential side-fill support.

Mechanical cutters will clear a pipeline temporarily, but they also stimulate growth. Chemicals can kill the roots and retard new growth, but the residual chemicals are usually washed away in a year or less.

However, when a special growth inhibitor is mixed with chemical grout, it is encapsulated and cannot be lost. As a result, roots cannot penetrate the protective gel.

## **INVEST IN THE BEST**

An experienced grout installer with good equipment and a positive record is a good investment. While chemical grout is the least expensive way to stop infiltration, the least expensive applicator is not always the best buy.

## **POSITIVE PROOF OF EVERY TEST AND SEAL OPERATION**

Every step of the test and seal operation can be recorded on video tape to provide a permanent record of the exact condition of the pipeline.

Interested parties will be able to observe the position of the packer at each joint, the results of the initial air test, the pressure and amount of grout injected, and the followup air test.

