

ROOT TREATMENT
SPECIFICATION GUIDELINES

SEWER LINE CHEMICAL ROOT TREATMENT (Foaming Method)
(As provided by NASSCO)

1. Intent: The intent of chemical root treatment is to kill tree roots in sanitary sewer lines and to inhibit root re-growth without damaging the trees, the environment, or the treatment plant.
2. Reference Specifications: The chemical root treatment material shall be EPA registered and labeled for use in sewer lines and acceptable to the state agencies having jurisdiction over its use.

The Contractor shall submit a specimen product label of the material to be used in chemical root treatment to the Engineer with his bid or proposal.

All materials and mixing/application procedures for chemical root treatment shall be consistent with the latest standards, requirements, and recommendations of the manufacturer of the chemical root treatment material used.

3. Materials: The active ingredient for killing roots shall be a nonsystemic herbicide which will kill roots at low concentrations but which will not permanently affects parts of the plant distant from the treated roots. The active ingredient must be spontaneously detoxified by natural chemical/biochemical processes following its use. **Manufacturer's maximum use guidelines should always be observed.**

The active ingredient for inhibiting root regrowth in sanitary sewers shall inhibit root cell growth on contact but shall not be transported so as to damage other portions of the plant. The material shall form a persistent chemical barrier suppressing the growth of root tips. The material shall be sufficiently stable under conditions of use to provide protection for twelve months but shall be subject to decomposition in wastewater treatment plants without disturbing plant processes.

To improve transportation of the active ingredients into root tissues, the root treatment material shall contain emulsifiers to degrease root masses and remove fatty acids from root tissue and surfactants to convert an aqueous solution of the root treatment agent into a volatile foam when using the proper aeration equipment. This method insures root treatment material is held in line until chemical reaction is complete and roots are fully exposed to chemical.

4. Precautions and Responsibility: The Contractor's attention is directed to the safety requirements and precautions associated with the use of the root treatment material.

The Contractor is required to be knowledgeable of and in compliance with federal and state requirements relative to the root treatment material and its use. Compliance with federal state law shall supersede compliance with the provisions of this contract.

Mixing and application of the root treatment material shall be done under the supervision of a state-certified pesticide (herbicide) applicators as required by law.

The Contractor shall use precautions for the protection of all persons, vegetation, animals, and property. The Contractor is responsible for damage to private property and vegetation.

5. Preparatory Procedures: Root tips are the principal growth areas and are the surfaces most effectively penetrated by root treatment chemicals. When the root tips are damaged or removed by sewer line cleaning, chemical treatment will be less effective. Consequently, no cleaning is recommended in lines prior to chemical root treatment unless extensive grease, root masses, or debris preclude proper application of the material.
6. Flow Control: Sewer service shall generally not be interrupted during root treatment. In situations where it is necessary to shut down upstream pumping stations or block/bypass upstream flows, the Contractor shall coordinate his activities with the Engineer and Owner and to the work at night or during periods of low flow (see SEWER FLOW CONTROL and TEMPORARY BYPASS PUMPING SYSTEMS).
7. Mixing Procedures: All materials shall be delivered to the site in undamaged, unopened containers bearing the manufacturer's original label. Mixing of the root treatment material shall be done at the time of application. The water used shall be clear and free of acid, alkali, oxidizing agents, oil, or other organic materials. Mixing water temperature shall be between 40 F and 80 F. Mixing of root treatment material with water must be accomplished immediately before injection of foam into sewer line.
8. Application Procedures: Where conditions permit, the volume of foam shall be sufficient to completely fill the air space above the flow, manhole to manhole. In all cases, the volume of foam delivered to the sewer line shall be sufficient to attach to and permeate all root masses.

The hose insertion method is the most common and lowest risk method of foam application. The foam shall be applied at sufficient pressure to penetrate a minimum of 5 feet into service connections.

9. Root Removal: Removal of root is a separate operation and is not included in the scope of root treatment (see SEWER LINE CLEANING).

Biological decomposition of dead root tissue occurs faster in septic conditions. Removal of dead roots, where required, should be postponed as long as possible after chemical root treatment to facilitate easier cleaning. Sewer line cleaning shall be scheduled no less than six weeks after root treatment.

Use of high-velocity jet machines and mechanical sewer cleaning tools will reduce the persistence of the growth inhibitor ingredient and is advisable only in situations where the cleaning is necessary.