

RAINBOW TECHNOLOGY TECHNICAL BULLETIN

POLE SETTING FOAM AND UNDERGROUND UTILITIES

Best Practices for Installation Around Gas Pipe, Conduit, Telecom Cable, and Utility Infrastructure

Understanding Foam Expansion and Heat Generation

Rainbow Technology pole setting foams utilize polyurethane chemistry to create a strong, structural backfill. During the curing process, polyurethane foam naturally produces heat as part of the chemical reaction.

The amount of heat generated depends on several factors, including:

- Hole diameter and depth
- Foam quantity installed
- Ambient temperature
- Soil temperature
- Moisture conditions
- Installation sequence

As with all polyurethane foam systems, installers should evaluate underground utility conditions before placement and assess the proximity of underground utilities when determining whether pole setting foam is appropriate for the specific installation conditions. When exposed utilities are present, installers should consult the utility owner, facility operator, or applicable engineering specifications regarding allowable service temperatures and installation requirements. This bulletin is intended to promote awareness of utility conflicts and support safe installation practices.

KEY CONSIDERATION

Polyurethane foam naturally generates heat during the curing process. Whenever exposed plastic pipe, conduit, telecommunications infrastructure, or other temperature-sensitive utilities are present within the installation area, installers should evaluate utility proximity and follow applicable utility owner requirements before proceeding with foam placement. Utility materials, operating conditions, and temperature tolerances vary; therefore, site-specific evaluation is recommended whenever utility conflicts exist.

Utility Identification and Site Evaluation

Before installing polyurethane pole setting foam, all underground utilities should be properly located, identified, and evaluated. Contractors should comply with 811 notification requirements and visually inspect augered, dug, or hydrovac-excavated holes for the presence of gas lines, water services, communications cable, fiber optic infrastructure, electrical conduit, or other buried assets. Where utility conflicts are present or suspected, appropriate exposure methods such as vacuum excavation should be used to verify facility location and clearance. The suitability of foam installation should then be evaluated based on site-specific conditions, utility proximity, and applicable owner requirements.

Utility Infrastructure Considerations

When utilities are exposed within the pole hole, the installation should be evaluated prior to pole setting foam placement. Installers should notify the utility owner when required, maintain separation or thermal insulation from exposed facilities whenever practical, evaluate potential heat exposure, and comply with all utility owner requirements and project specifications. Utility materials and temperature tolerances vary, and site-specific review should be completed before proceeding with installation.

Important Notice

This technical bulletin is intended as general guidance only. Site conditions, utility materials, utility owner requirements, and environmental conditions vary from location to location. The contractor is responsible for evaluating field conditions and determining the suitability of any backfill method for a specific application. Rainbow Technology recommends compliance with all applicable utility locating, excavation, safety, and installation requirements.

Industry Best Practice

No pole-setting material, whether polyurethane foam, concrete, flowable fill, or compacted aggregate, should be installed without first identifying underground utility conflicts.

The safest approach is always:

1. Locate utilities.
2. Expose utilities when necessary.
3. Evaluate clearances and installation conditions.
4. Select the appropriate backfill material for the specific application.

Why Utilities Use Rainbow Pole Setting Foam

Rainbow pole-setting foam is used throughout the utility industry because it provides:

- Rapid pole installation
- Reduced restoration costs
- Lower installation labor
- Consistent installations
- Minimal excavation requirements
- Long-term structural support

When installed in accordance with Rainbow Technology guidelines and accepted utility construction practices, pole-setting foam provides a safe and effective alternative to traditional backfill materials.