ROWTEK

One-Page Technical Thesis

Mechanical Risk Mitigation for Third-Party Excavation Damage

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1. Scope of Application

Rowtek is designed for **buried critical infrastructure** exposed to third-party excavation risk, including: - Gas distribution pipelines (steel and plastic) - Gas transmission and transition areas - Electric conduits - Fiber-optic and telecom networks

Rowtek applies where assets are buried at **minimum code-compliant depth** or where depth of cover is variable and excavation risk remains material.

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2. The Systemic Problem

Despite established damage-prevention frameworks (811 / One-Call, marking, training, and public awareness), **excavation-related incidents continue to occur**.

The common failure mode is not lack of procedure, but lack of **physical protection**.

Between the excavation activity and the buried asset, the system typically relies on: - Warning tape - Procedural compliance - Human behavior

There is no passive mechanical barrier protecting the last meter above the asset.

When human or equipment error occurs, the result is often: - Direct strike - Asset deformation - Reportable safety incidents - Regulatory exposure

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3. The Identified Gap

Current mitigation measures are largely **behavior-dependent**.

In high-consequence or high-activity areas, this creates unacceptable **residual risk**, particularly where: - Excavation equipment (backhoes, excavators) is used - Depth of cover varies from design assumptions - Concrete slabs are impractical or inconsistently applied

The absence of a standardized **mechanical interception layer** is the core gap.

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4. Rowtek Definition

Rowtek is a **passive mechanical protection barrier** installed above buried assets to: - Absorb and redistribute excavation impact energy - Provide immediate tactile feedback to the operator upon contact - Prevent direct contact between excavation equipment and the asset

Rowtek is manufactured from **HDPE** and designed to either: - Survive impact events, or - Sacrificially fail while preserving asset integrity

Both outcomes are acceptable provided the asset remains protected.

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5. What Rowtek Is Not

Rowtek does **not**: - Rely on power, sensors, or software - Require activation or monitoring - Replace 811 / One-Call processes - Eliminate the need for training or marking

Rowtek **complements** existing controls by addressing the physical failure mode.

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6. Risk and Regulatory Logic

In excavation damage investigations, defenses typically rely on: - Procedural compliance - Proper marking - Contractor accountability

Rowtek enables an additional, defensible position:

> **A reasonable physical protective measure was in place to mitigate foreseeable third-party damage.**

This reframes incidents from procedural failure to **residual risk despite mitigation**.

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7. Limits of Use

Rowtek is **not intended for blanket deployment**.

It is applicable in: - High-consequence areas - Repeated excavation zones - Locations where concrete slabs are impractical - Assets requiring enhanced audit defensibility

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8. Positioning in the System

Rowtek should initially be treated as: - **Recommended best practice** in defined cases

With the objective of evolving toward: - **Mandatory mechanical protection** where risk justification supports it

9. Core Statement

> **Rowtek exists to mitigate excavation-related risk in high-consequence areas by providing a passive mechanical barrier against third-party damage.**

This document defines the technical rationale for Rowtek. It is intended for damage prevention, engineering, safety, and regulatory evaluation—not for commercial promotion.