

COURSE CONTENT OVERVIEW

CAT and Genny Training



This CAT and Genny training course will support you in keeping yourself and those around you safe, reduce the risk of harm and ensure you know how to respond appropriately in emergency situations. It provides comprehensive theoretical instruction on how to locate, trace and identify buried services safely and prevent service strikes, in line with key health and safety requirements and guidance.

Tens of thousands of underground utility strikes occur each year and can lead to severe injuries, fatalities, service disruption and extensive costs in damage. Striking buried services can have serious consequences, making appropriate training essential for anyone who needs to locate, trace or identify buried services safely before excavation.

Module 1: Introduction to Underground Services

This module introduces the hazards presented by buried services and the planning required before excavation. It explains how utility plans, visual checks, CAT and Genny surveys, trial holes and safe digging methods are used to locate and identify services, alongside PUWER, Permits to Dig, HSG47 and emergency actions following a service strike.

- Types of buried services
- Risks associated with buried services
- PUWER
- How to locate underground services
- Reviewing utility plans and records
- Visual inspections
- CAT and Genny
- Sondes, mice and tracing rods
- Trial holes - hand digging and vacuum excavation
- Permit to Dig
- Emergency procedures
- Reporting

Module 2: Understanding Cable Avoidance Tools (CATs)

This module explains how CAT equipment detects electromagnetic signals and how manual and automatic models differ. It covers the main operating modes, their limitations and the safety features that help operators locate buried services accurately. It also explains calibration, pre-use checks, GPS and data logging.

- CATs
- Understanding signals - AC and DC
- Function modes: Power, Genny, Radio and Avoidance modes
- Cathodic Protection System (CPS) scan
- CAT safety features - alerts and warnings
- Manual CAT - calibration check
- Automatic CAT - Extended Self Test (EST)
- Visual inspection
- GPS and data logging

Module 3: Understanding the Genny

This module explores how Genny and transmitter equipment create traceable signals and how frequency choice affects locating results. It explains induction, nulling, direct connection and signal clamp methods, plus the use of sondes and tracing reels for services that cannot be detected using standard techniques.

- Transmitter kHz frequencies
- Induction
- Nulling method (active search or area search)
- Direct connection
- Signal clamp
- Using a sonde
- Tracing reels and conductive tracing methods

Module 4: Application

This module applies CAT and Genny knowledge to real locating situations. It examines the factors that can affect detection, how to interpret signal feedback and the correct scanning and pinpointing approach. It also demonstrates manual and automatic CAT use, sonde locating and depth-estimating techniques.

- Limitations (including the CAT, Genny, transmitter, operator and equipment)
- Understanding signals
- Tidemark (peak hold line)
- Signals and services
- Best practice
- How to use CATs (including how to turn on the CAT, perform function tests, hold, walk and sweep correctly, find direction and pinpoint)
- Locating a sonde
- Depth estimating and limitations

Aims of the training

By the end of this course, you will be able to:

- Understand how to identify common buried services, the risks associated with service strikes and the checks required before excavation begins.
- Explain how CAT equipment is used to locate and identify buried services, including the purpose and limitations of Power, Radio, Genny and Avoidance modes.
- Know how Genny equipment, signal clamps, sondes and tracing methods are used to trace buried services and improve detection reliability.
- Understand safe scanning, pinpointing and depth-estimating principles while recognising the limitations of locating equipment.
- Know how to follow key health and safety guidance to help prevent service strikes and reduce the risk of injury, damage and disruption.