

Underground Services

Services are an essential part of everyday life, they are located overhead and below ground – often in congested areas where you don't expect them, and frequently without the warning tapes and covering you would normally expect to see.

Interserve have recently suffered a high incident rate for service strikes and we have had some very serious near misses involving high voltage cables.

Issues:-

Electricity	- potentially fatal
Water	- capable of causing substantial and wide-ranging property damage
Gas	- potentially explosive
Fuel/pipelines	- huge environmental impact
Telecoms/fibre optic	- very expensive to repair

What causes underground service strikes?

Underground services are damaged due to a number of different reasons. These can normally be put down to:-

- Poor planning
- **Rushing to complete a section of work**
- **Poor digging techniques**
- Lack of information
- Inaccurate plans
- **Lack of care** around the services
- **Not using or improper use of the Cable Avoidance Tool (CAT).**

In most cases of services strikes, it is a combination of all or some of the above and increasingly, we are finding that we are damaging cables we have already exposed. To avoid the strike from happening, there must be a method statement and ground disturbance permit in place so that your work can be carried out safely.

Working Safely

It is important that services should always be assumed to be present, unless it has been shown otherwise

There are five basic elements to working safely when digging:-

- **Planning the Work:** Timescales, protection of exposed services and diversions of services
- **Service Plans:** Accurate, readable and available to all
- **Cable Avoidance Tools (CAT):** Trained individuals, calibrated and serviceable tools
- **Ground Disturbance Permit:** Issued by the supervisor prior to excavation starting
- **Safe Digging Practices:** Trial holes, hand digging when appropriate

**In all cases, don't start work unless you have a Ground Disturbance Permit.
Everyone in the digging crew needs to ensure that the method statement is always followed.**

If you think you have damaged a service:

It is important that service strikes are treated and reported as **Near Misses**, as they are unplanned, unwanted **and could cause serious injury or even death.**

If you strike a service:-

- Clear the area
- Report to your supervisor and Interserve
- Don't return to the area until you have been given clearance (some cables "trip out" when first damaged, only to re-energise later occasionally with a flash-over/explosion.

Questions:

- 1 When might you need a permit?
- 2 What potential services are on this site?

Further Information:- CIP Manual, Section 20

Note: Further guidance on excavation practice follows for information and reference when delivering the Toolbox Talk.

This is not a substitute for proper planning (Risk Assessment and Method Statement), should be briefed to the workforce and works should not start until a permit for the works has been issued.

Method Statement and Ground Disturbance Permit

Cables must be located by a trained competent person in the digging crew using a CAT (Cable Avoidance Tool) to locate the services in either power or radio mode, depending on the type of service to be located.

Pipes and cables can be located using a GENNY and CAT combined, with the Genny connected to the metallic surface on the pipe or directly above the cable to be traced and the CAT set to Signal mode.

Use your cat continually and not just on the surface



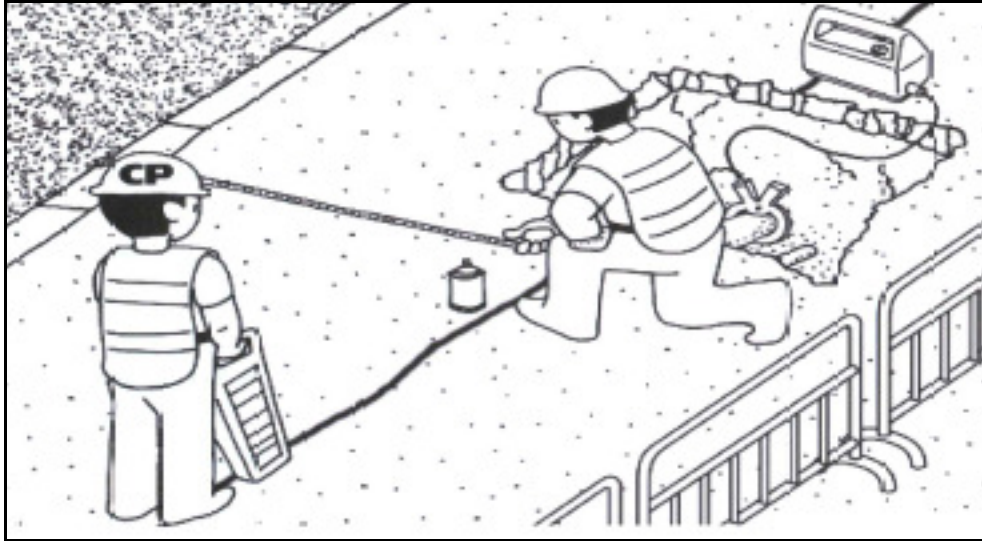
Once an existing service is located, it should be clearly marked on the site by the use of pegs, warning signs and spray paint (all three).

When carrying out excavation works, your supervisor will issue you with a Ground Disturbance Permit that will show:-

- Your work area
- Any services within your work area
- The 500mm limit which mechanical excavation must stop next to any services

Always work to your ground disturbance permit

Trial holes must be carried out on all known services to accurately identify their position and to highlight any clashes with proposed or planned work, eg: an existing pipe clashing with the invert of a new pipeline.



When excavating for existing services, the trial hole must be carried out by hand, mechanical and power tools must never be used directly over an existing service, as this may result in a fatal explosion or electrocution.

When a service is located in the bottom of a trench, it should be protected with suitable timber or other material to prevent it being damaged.

If a service runs across a trench then slings or props must be used to support it and to keep it out of the way of the works to avoid damaging it.

In the event of the discovery of an uncharted service or a service surrounded in concrete, report it to your supervisor immediately for advice.

Keeping It Simple

To keep yourself safe, remember these simple rules:-

- Do follow your Ground Disturbance Permit and Method Statement**
- Do report any damages immediately**
- Do reinstate suitable Surround and Marker Tape**
- Do Plan – Locate - Dig**

- Don't work without a Ground Disturbance Permit**
- Don't dig blind – use your CAT continually, not just on the surface**
- Don't rely on marker tape to warn you of any services**
- Don't use services as ladders or steps for access and egress of excavations**
- Don't mechanically excavate within 500mm of any known services**

Don't Walk By