

Excavations Dangers & Underground Utilities and Services

Safety Bulletin

CARNEY
CONSULTANCY

It is important to remember that excavations can be very dangerous activities for operatives, however, adding in the hazards of underground utilities then increases the dangers and hazards presented.

Therefore, operatives and management must know the potential dangers they may face when undertaking excavations and the emergency procedures they should follow if something goes wrong during an excavation. The planning requirements and safe excavation practices to reduce the risk of something going wrong are to be made aware to the operatives undertaking the activities prior to commencement. Health and Safety Guidance (HSG) 47 from the Health and Safety Executive provides guidance on safely working near underground services and therefore should be utilised for safe practice when doing excavations. HSG47 can be downloaded from the HSE website at no cost.

Working Safely with Excavations & Underground Utilities and Services

The document HSG47 highlights the significant risks associated with striking underground services, such as electric cables, gas pipes, and water mains. These risks include serious injuries, fatalities, and disruptions to essential services. Understanding these dangers is crucial for anyone involved in excavation work.

Effective planning is essential for safe excavations, using HSG47 with Safe Systems of Work (SSoW), Method Statements and Risk Assessment (RAMS) along with Permits to Dig can help with the planning of excavations and Reduce the Risk with control measures in place.

Striking underground services can lead to service disruptions, serious injuries, or even fatalities.

Hence, it is imperative for all individuals engaged in excavation operations to comprehend these risks and approach the task with the appropriate level of safe working practices. It's important to gather plans from sources such as utility companies and network operators to help locate existing underground services as a main priority.

However, using a Cable Avoidance Tool (CAT) and Signal Generator (Genny) to verify the information in the plans is crucial, as plans may be incorrect or inaccurately scaled. Despite having plans and using a CAT and Genny, doesn't mean all bases are covered. A CAT and Genny will not detect plastic pipes, such as plastic water pipes, gas pipes, soil pipes, and fibre data cabling; they only detect metallic services.

Therefore, all excavations should be carried out carefully, with operatives having the right training, equipment, and supervision to locate and work around existing services and identify any services that haven't been detected by other means. HSG 47 also emphasises



the importance of continuous monitoring during excavation by management to ensure safe working practices are being conducted.

Located utilities should be clearly identified and marked on both plans (if not on them) and the site. On paved surfaces, use crayon, chalk, or paint, while on grassed or un-surfaced areas, use luminescent flags or wooden pegs to ensure visibility. This helps others to be aware of these utilities.

For new services that have been laid, it is important to update the plans and inform the relevant people or organisations. Both new and existing services should have appropriate warnings, such as tape or tiles, to indicate their presence if future excavations take place. And, backfilling of excavations should be done carefully so as not to disrupt new and existing utilities.

Emergency Procedures

In the event of an emergency if operatives hit an underground service, from HSG47 operatives should report the incident to the relevant authorities for action to be taken to prevent further issues occurring. However, informing line management should also be part of this process so actions can be taken to make the area safe.

Incidents and Accidents should always be reported to improve safety practices.

Conclusion

The HSE's "Avoiding Danger from Underground Services" (HSG47) is an essential resource for anyone involved in excavation work combined with the creation of suitable and sufficient RAMS and SSoWs. Management and Operatives can also significantly reduce the risks associated with excavations and underground services by understanding the potential dangers, planning effectively, using safe excavation practices, and being prepared for emergencies. These measures will ensure a safer working environment and help prevent accidents and service disruptions. Accidents and Incidents should always be reported, recorded and acted upon so they can be learned from, so that further control measures are put in place if possible.