

Overview

This national occupational standard defines the competence involved in interpreting instructions, planning, organising and adopting safe working practices while preparing and carrying out the excavation of holes and trenches in ground and pavement structures, taking care of utility services and other sub-structures, trench support systems and the provision of entry and exit arrangements.

This standard is for those responsible for site operations during gas network construction activities. These activities will usually include the leadership and direction of the members of a team and decision making regarding the approach to take when undertaking the work.

This standard consists of four elements:

1. excavate on site in accordance with operational requirements
2. maintain the integrity of the excavation
3. effectively use and communicate data and information
4. Resolve problems that arise from the excavation work

Performance criteria

You must be able to:

Excavate on site in accordance with operational requirements

1. determine the method of excavation which is suitable for the surface and sub-surface materials being removed and which meets with statutory and regulatory Codes of Practice
2. carry out site-specific risk assessment, and review in accordance with company procedures.
3. Select, check condition and use the appropriate personal protective equipment (PPE)
4. select and use the tools and equipment that are the most suitable for the method of excavation to be used
5. confirm the position and size of excavation in accordance with instructions and the work specification
6. excavate, identify, select, segregate and store materials in accordance with work instructions and Codes of Practice
7. carry out the excavation in a manner that avoids damage to supply apparatus
8. minimise damage to the natural environment in accordance with technical guidance and keep gullies and water courses clear at all times
9. support and protect exposed supply apparatus in accordance with work instructions and relevant Codes of Practice
10. remove surplus materials in accordance with work instructions and requirements
11. confirm dimensions and condition of excavation with instructions and the works specification
12. ensure all work is carried out to approved procedures and practices and in compliance with statutory requirements

Maintain the integrity of the excavation

13. confirm the method of support is fit-for-purpose to the size of the excavation and the nature of the ground conditions and adjacent structures
14. carry out installation and removal of support mechanisms in accordance with instructions and relevant Codes of Practice
15. maintain the condition of the excavation by adjustment to support mechanisms and removal of ground water as required
16. remove and dispose of ground water from the excavation in accordance with approved procedures

17. monitor and maintain the condition of support mechanisms safely to the requirements in accordance with operational and organisational safe working procedures
18. take steps to resolve situations that require measures to deal with dangerous atmospheres in accordance with relevant Codes of Practice and safe working procedures
19. establish arrangements for access to, and egress from, the excavation in accordance with statutory requirements and approved procedures and practices
20. ensure all safety checks are carried out before any entry into excavation
21. take steps to ensure the site-specific risk assessment provides adequate safeguards in work practices to respond to an excavation becoming a confined space
22. confirm the condition of the ground area adjacent to the excavation as safe in accordance with relevant Codes of Practice

Use and communicate data and information

23. use information in the work instructions and specification to determine the work site and area to be excavated
24. report detrimental conditions and defects of the excavation and support mechanisms outside the responsibility of the job holder, in accordance with relevant Codes of Practice

25. use approved procedures and practices and statutory requirements to determine the requirement for excavation support

26. check with the designated personnel any circumstances where information appears incorrect
27. use organisational information systems to record and store data and information

Resolve problems that arise from the excavation work

28. resolve problems arising from the excavation work within the responsibility of the job role
29. report promptly - to the designated person - any damage to supply apparatus
30. advise colleagues or managers where situations require intervention

31. refer matters outside responsibility of the job role to the designated person using approved procedures

Knowledge and understanding

You need to know and understand: **General**

1. the main responsibilities of the employer and employee under the Health and Safety at Work Act
2. the main responsibilities of the employer and employee under environmental legislation
3. the company reporting lines, roles, responsibilities and levels of authority
4. the safe procedures for handling hazardous materials
5. organisational accident recording and reporting procedures
6. the range and use of personal protective equipment for the work
7. safe digging practices as laid out in HSG47
8. the control systems applicable for managing the safety of working in excavations

Excavation

9. legislation governing supports for excavations
10. safe procedures for handling the range of excavation support equipment
11. the main methods of excavation including hand dig and machine
12. the equipment used for hand and machine excavation including hand and power tools and motorised equipment.
13. types of surfaces and sub-surfaces
14. the types of sub-surface materials used for the different paving surfaces
15. the main statutory requirements of operatives engaged in excavation work in terms of personal protection, excavation activities, the support of supply apparatus, the support of excavations
16. the need for a competent banksman when excavating by machine
17. requirements of legislation including statutory and regulatory provisions
18. the selection, use and care of hand and power tools
19. essential maintenance of hand and power tools
20. the types of damage to supply apparatus that can occur with the use of incorrect excavation practices
21. the safety risks in using incorrect excavation practices
22. the potential consequences of incorrect excavation activities

23. the types and function of the different supplies that may be encountered in excavation works, including utilities and other agency apparatus and above ground services, built structures, and natural features
24. how to identify the different types of supplies encountered in excavation work
25. the potential impact of changing weather conditions on the excavation
26. the potential consequences of a failure to establish correct trench support structures
27. the importance of economy in the use of powered or motorised equipment for excavation works
28. safe methods of storage or disposal of materials with a potential environmental hazard
29. how the use of incorrect materials could lead to damage to the supply apparatus or sub-structure, costs in re-doing work, and delays in the job programme
30. how incorrect storage of materials could render materials unfit for use, with consequent cost implications.
31. approved procedures and practices in the context of the operations, the work activity and the workplace
32. industry procedures and practices for excavation work including environmental, organisational, regulatory, emergency, operational, health, safety and environment compliance, company procedures and risk assessments within the remit of the candidate's responsibility.
33. the roles and responsibilities of persons within the site/highways operations team
34. site management structures for site or highways operations.
35. the circumstances in which to refer problems outside the job holder's responsibility to the designated persons
36. responsibilities of the employer and employee under the Health and Safety at Work Act for work in excavations
37. health and safety guidelines governing work in excavations
38. safe procedures for handling the range of excavation equipment
39. safe procedures for handling hazardous materials
40. accident recording and reporting procedures
41. the range and use of personal protective equipment used in excavation works

42. main industry procedures and practices for excavation work including environmental, organisational, regulatory, emergency, operational, Health, Safety and Environment compliance, company procedures and risk assessments within the remit of the job holder's responsibility.
43. how to identify a confined space and where an excavation has the potential to become a confined space, the hazards associated with it and the procedures to follow
44. the importance of using the appropriate atmosphere monitoring equipment
45. procedures for reporting and recording job progress, problems, deviations to work programmes
46. different preparatory methods of trench support, including assembly and checking methods
47. methods and principles of excavation support systems, including timber, sheeting, mechanical and hydraulic and pneumatic systems
48. materials for excavation support systems, including timber, metal sheet
49. circumstances where excavation support must be installed
50. excavation support systems for different excavation depths and soil types
51. excavation support systems for excavations that may be subject to subsidence
52. causes of instability in excavated areas, including soil types, presence of ground water, leaks from water and drainage pipework
53. situations where excavation pumping systems may have to be used
54. hazards that could arise from working in excavations without natural or assisted ventilation, from gas escapes and naturally occurring gases, damaged supply apparatus and damage to electrical apparatus
55. consequences for the safety of the workforce, supply apparatus, other sub-structures, job progress and cost if the integrity of the excavation is not maintained

Scope/range

Supply apparatus - the supply apparatus for utilities and other agencies, above and below ground services, built structures, and the natural environment (e.g. foundations, tree roots, natural watercourses)

Surface and sub-surface - flexible, composite, rigid and modular pavement construction, verge, natural ground

Approved procedures and practices – environmental, statutory regulatory, emergency, operational, health and safety, organisational and company procedures, and risk assessments

EUS GNC007

Excavate and Maintain Holes and Trenches Site Operations in Gas Network Construction



Developed by Energy & Utility Skills

Version Number 2

Date Approved December 2017

Indicative Review Date December 2021

Validity Current

Status Original

Originating Organisation Energy & Utility Skills

Original URN EUS GNC007

Relevant Occupations Gas Team Leaders, Craftspersons and Technicians

Suite Gas Network Construction

Keywords gas, network, gas network, excavate, excavation, trenches
