


XP-452-VV-0-00011 SAFETY REGULATION VV 11 Dig	 Balen/Pelt
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1 PURPOSE

This Safety Regulation describes the requirements that are set when excavation work is carried out.

Excavations are all activities that have an impact on the ground surface or subsoil and that may cause damage to underground cables and pipes such as construction or demolition works, excavation or earthworks, storage of heavy equipment, planting or removal of deep-rooting plants, installation of fences or driving in of poles, clearing of ditches/ponds,...

2 SCOPE

This regulation applies to all work on Nyrstar Belgium's premises that is carried out below ground level. (e.g. excavation works, road works, etc.) or in which objects are driven into the ground (e.g. pickets, poles, etc.).

3 DEFINITIONS

BA5HS2 WV : Electrician who has B5 training High voltage level 2 work preparation.

4 PRESCRIPTION

4.1 Procedure

4.1.1 Preparatory work

For all works covered by this regulation, the grave checklist (XF-452-FCH-0-00002) must always be completed in advance:

- by the coordinating Nyrstar executor
- by the work planner in case the works are carried out by third parties.

A plan application must be submitted for the start-up of earthworks:

- internally for utility lines;
- via KLIP for excavations in the vicinity of external utility lines (see below)

A risk analysis and work description must also be drawn up and the [internal](#) underground plans off pipes, cables should be consulted

An electrician of level BA5HS2 WV should always be consulted.

The environmental department should always be consulted for the purpose of:

- determining the trajectory of the excavated (soil foreign) materials (see checklist XF-701-FCH-0-00005: Checklist flow diagram soil):
 - o soil, whether or not visibly contaminated;
 - o pure bricks, pure rubble, pure crushed stone, ...;
 - o zinc and combustion ash, zinc slag, contaminated sludge, ...;
 - o other wastes such as refractory bricks, gypsum, lime, metals, asbestos, ...

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- make arrangements to backfill the excavated area with suitable backfill soil taking into account the regulations for cables (placement of underground cables) (DMS specifications);
- determine the finish of the remediated area.

Only with a fully completed checklist graves (XF-452-FCH-0-00002) can a work permit be applied for. The checklist is attached to the work permit.

In case of work that takes several days, a **completed and signed copy** of the grave checklist must be attached to the work permit.

If all preparatory work has been carried out and the site zone has been demarcated and released, the excavation work can be carried out.

4.1.2 Excavation work

The excavations are carried out according to the agreements laid down in the excavation checklist with the relevant persons / departments.

Underground cables, pipes and other obstacles will be carefully excavated and managed during the excavation work; in the vicinity of the aforementioned pipes, **ALWAYS manual excavation or the use of a suction truck will be used.**

In the case of work in the vicinity of underground high-voltage cables, these must first be de-energized, traced by means of manual trial trenching, and after tracing, these cables are marked above ground. Further arrangements should be included in the risk - analysis.

If a cable is damaged during excavation work, **this cable must not be manipulated again.** **Immediately warn** the department concerned / the week manager high voltage / high current and wait until the cable is released, locked and grounded. Excavations may only be resumed after cable has been released.

The following regulations must be observed **specifically** for excavation work in the vicinity of rail tracks (Infrabel) or Fluxys:

- Infrabel
 - o XP-561-PROC-0-00036-000 Infrabel: Working near tracks
 - o XP-561-PROC-0-00036-001 Infrabel: Safety distances type plan
 - o XP-561-PROC-0-00036-002 Infrabel: works execution regulation
 - o XP-561-PROC-0-00036-003 Infrabel: Tower crane installation
 - o XP-561-PROC-0-00036-004 Infrabel: Mobile crane replenishment
 - o XP-561-PROC-0-00036-005 Infrabel: placing scaffolding
 - o XP-561-PROC-0-00036-006 Infrabel: Work instruction non-rail
 - o XP-561-PROC-0-00036-007 Infrabel: General info works near tracks
- Fluxys
 - o XP-561-PROC-0-00037-000 Fluxys: Works near Fluxys infras
 - o XP-561-PROC-0-00037-001 Fluxys: Works to be notified

In case of an observed deviation, the relevant persons / departments are immediately notified to establish new arrangements.

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4.1.3 Cave-in

When an excavation, construction pit, underground work or tunnel is involved, appropriate precautions should be taken:

- 1°) through appropriate propping or embankment work;
 - 2°) to prevent hazards related to the falling of persons, material or objects or flooding hazards
 - 3°) to ensure adequate ventilation at all workplaces in order to create a healthy working environment that is not dangerous or harmful to the respiratory tract;
 - 4°) to enable workers to move to safety in the event of fire, flooding or collapse.
- Safe roads to and from the excavation must be provided.

Excavated earth, equipment and vehicles in use should be kept at a safe distance from the excavations; where necessary, appropriate fencing should be installed.

4.1.4 Feedback findings

If, during the excavation work, deviations from the agreements laid down in the excavation checklist are found, the persons/departments concerned must be informed immediately in order to lay down new agreements.

If deviations are found on the underground plans, the person in charge of the department concerned / electricians / plant must also be informed so that the underground plans can be adapted to the actual situation.