

PERIDECT

Manual Sheet (for SIEZA authorized partners only)

Underground line installation

Lines are first connected by the connectors UR2 as well as the other versions are. Subsequently the connected part is placed into the ground connector SmartJoint which ensures the resistance of the connector to moisture.

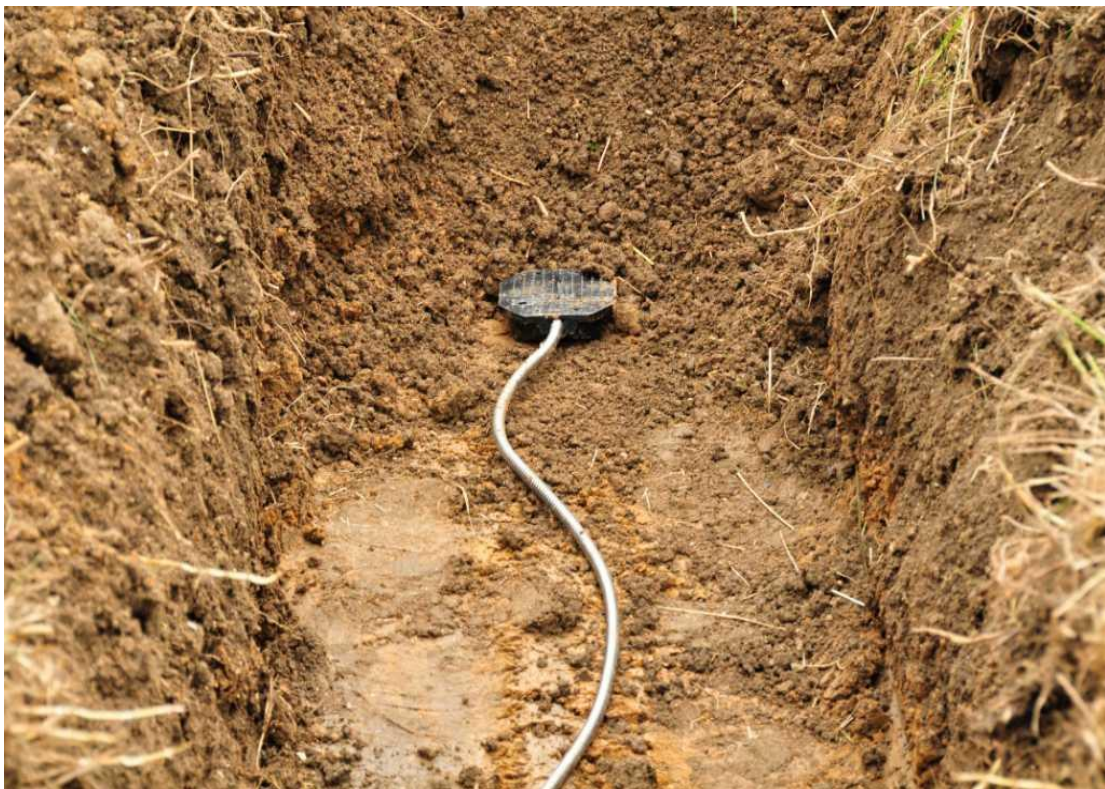


Picture 1: Opened ground connector SmartJoint

Connected line is laid directly into the ground to a depth of 40 cm while in normal cases there is no need for a special landscaping. The detectors have to be positioned flatwise with the larger base surface upwards (please see pictures 2, 3 and 4). To ensure a sufficient reserve against the cable tension, the cable of the detection line is laid wavy in the trench roughly in the shape of the sinusoid.



Picture 2: The cable ripple (the trench made by the excavator)



Picture 3: The trench in the soil made by the excavator



Picture 4: The trench made by the ground motor trencher

For backfilling the trench the original soil can be used. The trench width must be at least the same as the detector width, so when installed into the soil the width of 10 cm is sufficient. To speed up the installation it is an advantage to use the ground motor trenchers, with which a skilled worker creates over 50 m trench per hour (depending also on the type of the soil).



Picture 5: The ground trencher and the possibilities

The detectors can be installed at a distance of 1 to 3 m apart. The distance of the detectors is to be determined by the soil properties (the ability to transmit vibrations) and by a surrounding interference. When there is an interference in a particular place (e.g. when there is a rocky road used by cars at a distance of a few meters from the installation), it is appropriate to place the detectors closer to each other and this interference is eliminated significantly due to the differential logic. In the current clean environment without parasitic vibrations the distance of 2,5 m to 3 m between the detectors is adequate.

These effects must be estimated in the course of inspecting the area and taken into account during the subsequent design of the solution. This saves significant costs associated with any modifications after the installation.

In the case that we do not have a sufficient notion about the possible parasitic vibrations we recommend to dig a test line in for a few days in places where we expect a complicated environment and to connect the line to the test DEMO case. Thus we determine very quickly the conditions of the environment and we derive the appropriate distance between the detectors for ordering and installing.

In some specific environments (heavily waterlogged clay soil) may be suitable, in addition to a shorter distance between the detectors, to dig the detectors in closer to the surface.

At very high requirements for reliability of detection it is possible to create a corridor with a width of about 80 cm with a material that transmits vibrations well, typically round stones or grit.

Bed design:

- Minimum width of 80 cm derived from the length of the step (cannot be crossed)
- Excavation depth of 40 cm
- Bottom and sides of the trench loaded with geotextiles
- Detectors of the underground lines placed in the axis of the bed to the bottom
- Covered by gravel, round stones or grit with dimensions of at least 1-2 cm



Picture 6: Gravel sorted when wet, fraction 8/16