

EARTH ELECTRODES, GROUND ENHANCING PRODUCTS AND EARTH PITS

**ENHANCED ELECTRODES FOR LOW-CONDUCTIVITY SOILS
GRAPHITE ELECTRODE**

Graphite, with its high electrical and thermal conductivity, being unattackable and inert to chemical agents (apart from oxygen at a high temperature), is a very good element to make an earth electrode. The materials used such as perforation filling (graphite powder and thin clay-like powder) assure the contact between the electrode and the ground thanks to the capacity to even penetrate into rocky cracks.

Reference	External size (mm)	Shape	Included	Weight (kg)
AT-070H	600 x Ø150	Rigid graphite core + graphite powder with bag	AT-020F	10
AT-073H	1500 x Ø50	Rigid graphite core	AT-020F + AT-032L	35



INSTALLATION

This electrode is formed of a rigid graphite core surrounded by a layer of graphite powder and salts, which whilst helping to avoid mechanical damage during transportation and installation, also improves the conductivity of the electrode. This ensemble is introduced into the perforation, which connects to the test bonding bar installed in the earth pit, using cable of Ø8-10mm or tape of 30x2mm.

In order to optimize its duration and effectiveness, the hole should be filled with thin clay-like powder and special graphite powder for earthing:

Perforation of Ø200mm

Machinery needed:

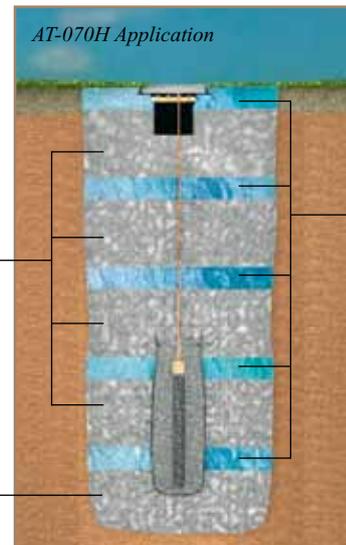
- Perforator with drill of Ø200mm and 2 meters length.
- Mixer (recommended).

Material:

- 2kg of graphite powder (AT-020L).
- 6kg of thin clay-like powder (AT-030L).

PROCEDURE:

1. Make a perforation of Ø200mm with a depth of at least 2 meters.
2. Connect to the electrode the necessary length of cable of Ø8-10mm or tape of 30x2mm to be able to make the connections in the earth pit afterwards.
3. In an adequate recipient (preferably a mixer), mix the fine clay-like powder (AT-030L) and the graphite powder (AT-020L) with 60 litres of water.
Note: If a mixer or adequate tool is not available, the filling of the perforation will be done in batches. For example, the filling can be done in four batches, using each time approximately 15 litres of water, 1,5kg of thin clay-like powder and 0,5kg of graphite powder.
4. Empty the mixture into the perforation, making sure it reaches the bottom of the hole.
5. Install the electrode with the wrapping in the perforation, being careful of not making strong impacts.
6. Make the necessary connections to the test bonding bar installed in the earth pit and close.



1 bag of thin clay-like powder 25kg
1/2 bag of graphite powder 25kg
Soil

2 bags of thin clay-like powder of 25kg

Hole of 1,5 x 1,5 x 2 meters

Machinery needed:

- Retroexcavator.

Material:

- 2 bags of graphite powder 25kg (AT-020L).
- 6 bags of thin clay-like powder of 25kg (AT-030L).
- Plenty of water.

PROCEDURE:

1. With the retroexcavator make a hole of 1,5 meters of width and 2 meters of depth.
2. Mix two bags of thin clay-like powder (AT-030L) and enough earth to sufficiently cover approximately 30cm height of the hole. Fill the bottom of the excavation.
3. Connect to the electrode, the necessary meters of cable of Ø8-10mm or tape of 30x2mm to be able to make afterwards the connections in the earth pit.
4. Install the electrode with the wrapping in the perforation, being careful of not making strong impacts.
5. Cover with water until you reach a level of 10 cm (approximately 225 litres of water). Wait a few minutes for the filter of the water and the increase in volume of the thin clay-like powder.
6. Continue filling the hole mixing a bag of thin clay-like powder, half a bag of graphite powder and enough earth to fill another 30 cm of height. Empty the mixture into the hole evenly.
7. Repeat steps 5 and 6 until you have used up the thin clay-like powder and the graphite (3 times).
8. Make the necessary connections in the test bonding bar installed in the earth pit and close.