



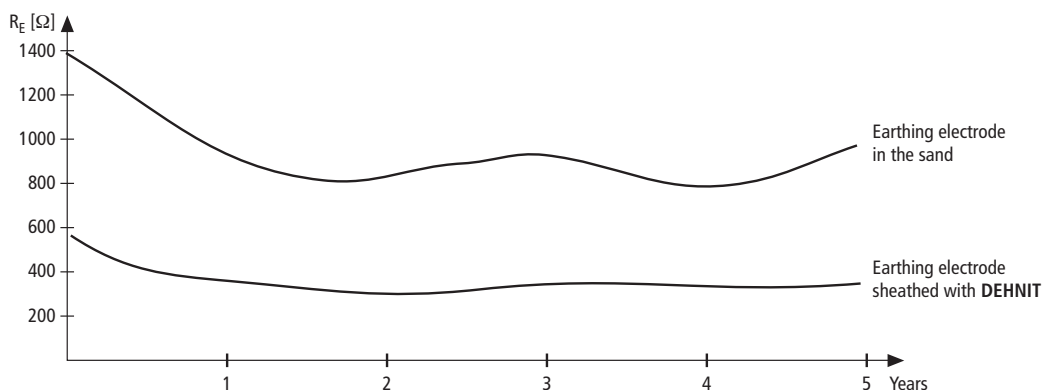
DEHN + SÖHNE

DEHNIT – Earthing Procedure To improve the Earthing Resistance

DEHNIT is a highly swellable special clay which can bind water to a great extent. The principle of the DEHNIT earthing procedure is to bind the fine-grained DEHNIT with water (by adding sand) and to sheathe the earthing electrode with it. This sheathing is conductive and enlarges the surface of the earthing electrode.

Compared with the common earthing procedure without sheathing, the DEHNIT procedure offers three important advantages:

- A much lower earthing resistance can be achieved even in case of a bad specific ground conductivity.
- Compared with earthing procedures without sheathing, this procedure can achieve earthing resistances up to 50 % lower while using the same expenditure of earthing electrode material (saving of earthing electrode material!).
- Earthing resistances are created which are independent from temperature and weather and largely remain constant throughout years (see Fig. 1).



(Fig.1) Time dependence of the earthing resistance of earth conductors made of galvanised steel, (St/tZn), 30 x 3.5 mm, 10 m long

Note for processing:

1 m³ DEHNIT filling requires approx. 67 kg DEHNIT.

1. Procedure for surface earthing

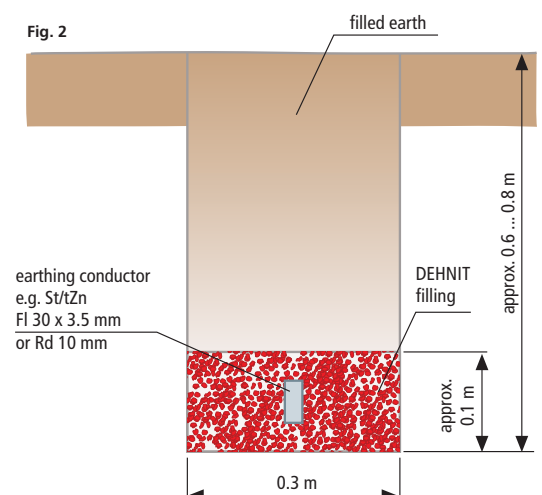
- Dig a ditch for the earth conductor (depth about 0.6 ... 0.8 m).
- Mix DEHNIT (e.g. with a concrete mixer).

The following mixing ratio has to be considered:

- 5 parts sand
- 1 part DEHNIT
- 1/2 part water

Please observe the following order, otherwise heavy clodding is possible:

DEHNIT – sand – water





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To improve the Earthing Resistance

- c) This mixture has to be filled into the ditch for the earth conductor until a layer of about 5 cm is formed
- d) The earth conductor is aligned straight and laid directly on this DEHNIT layer.
- e) Once again fill in a DEHNIT layer of about 5 cm for sheathing the earth conductor completely with DEHNIT.
- f) The filling has to be pounded mechanically or per foot.
- g) Refill the earth excavation.
- h) Take the first resistance measurement of the earth-termination system.

Note for processing:

According to this procedure, in practice a consumption of 2 kg DEHNIT has to be expected per running metre of earth conductor ditch.

2. Procedure for deep earthing

- a) Corresponding to the length of the deep driving earth rod, a hole has to be drilled with a diameter of at least 10 cm greater than the diameter (or the outer dimensions) of the earth rod.
- b) Mix DEHNIT according to 1 b).
- c) Put the earth rod in the middle of the drilled hole and fill DEHNIT into the remaining space. Pound the mass at intervals of 0.5 m filling level. The last half metre (below the earth surface) has to be refilled with natural earth.
- d) Take the first resistance measurement of the earth-termination system.

Note for processing:

According to this procedure, in practice a consumption of 0.84 kg DEHNIT has to be expected per metre depth of the earth rod ($d = 20$ mm).

The final earthing resistance will be achieved after about 3-4 months. It will be approx. $1/2 - 1/3$ of the value measured immediately after the filling with DEHNIT.

After that time the earthing resistance of the DEHNIT earth-termination system will be about 50 % lower compared to common earth-termination systems. This resistance value remains constant throughout years.

DEHNIT Delivery Unit

in paper bags, 25 kg each,
Part No. 573 000

Price on request.

