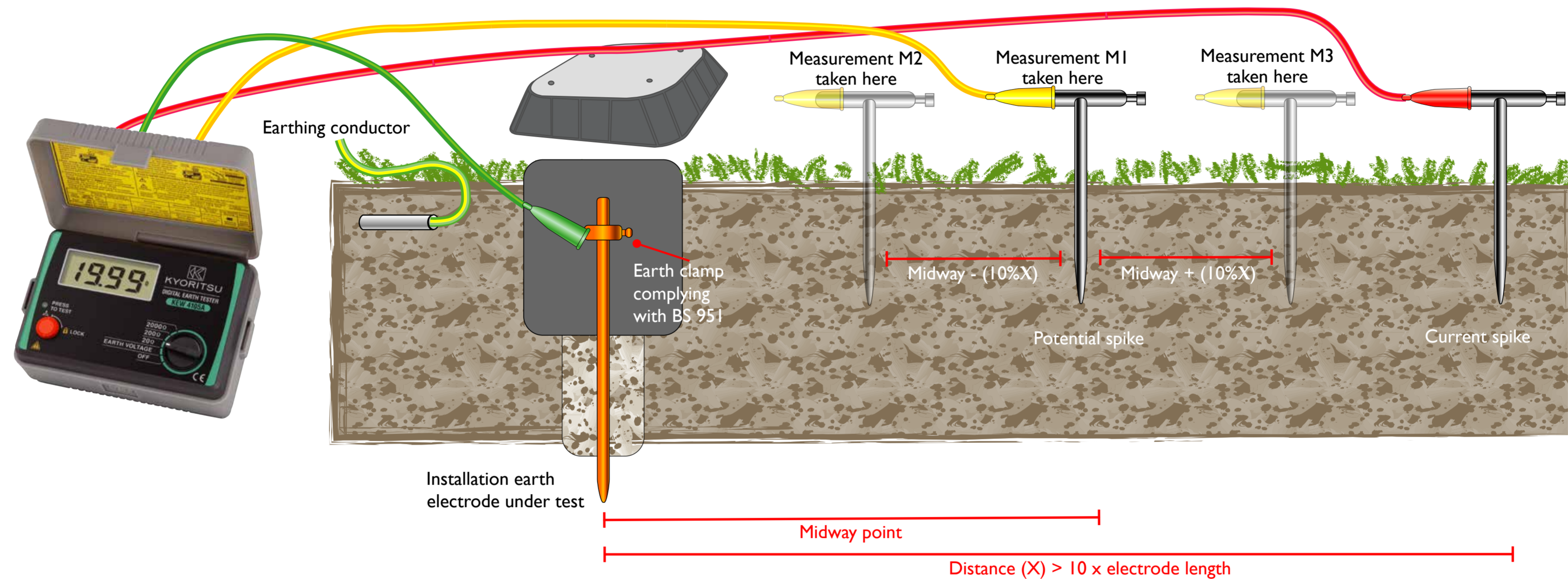


Earth Electrode Resistance

Earth electrode testing with two test spikes for compliance with Regulation 643.7.2



Test method E1

1. The installation must be safely isolated from the supply.
2. Disconnect the earthing conductor from the earth electrode under test.
3. Place the current spike a distance from the earth electrode that is at least 10 times the maximum dimension of the electrode system, e.g. 12 m for a 1.2 m long rod electrode.
4. Take three readings:
 - i) Measurement 1 (M1), with the potential electrode midway between the electrode and current spike.
 - ii) Measurement 2 (M2), with the potential spike moved 10% of the overall electrode to current spike distance towards the electrode under test.

- iii) Measurement 3 (M3) with the potential spike moved 10% of the overall electrode to current spike distance towards the current spike from its initial midway position.

Take an average of these readings. Measured average (M ave) = $\frac{M1 + M2 + M3}{3}$

Accuracy check: Establish the maximum deviation of the three readings from the average. Express this as a percentage deviation % = $(\text{Max deviation} / \text{M ave}) \times 100$.

As a measure of the accuracy of reading multiply this figure by a factor of 1.2 and it should be between 2 and 5 %. If this is too high, repeat the test with an increased distance between the electrode under test and the current spike.

Remember to reconnect the earthing conductor before the installation is energised.

Kewtech 'Clear Thinking' diagrams are schematics to aid the understanding of electrical testing. Ensure proper safety procedures are taken before any testing.

Johnny Ace says:

If you are unsure of any services below ground level carry out a 'CAT scan' prior to driving in the spikes. If the resistance is too high try driving the spikes deeper into the ground to reduce contact resistance.

