



# FurseCEM™

## FurseCEM™ conductive aggregate

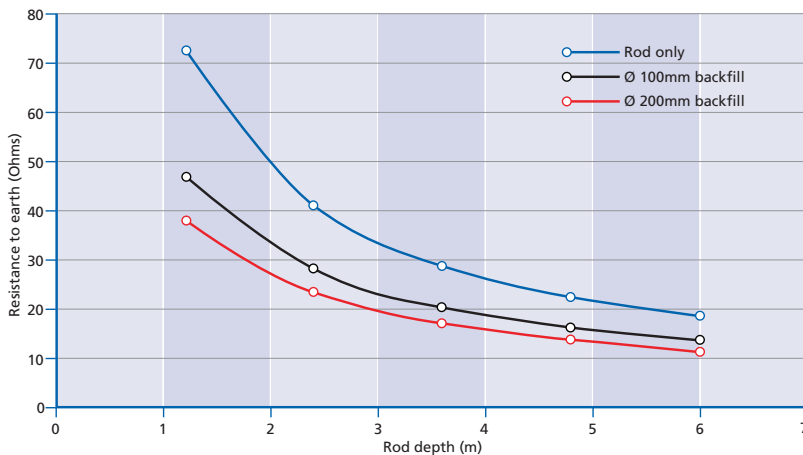
Certain ground conditions make it difficult to obtain a reliable earth resistance, whilst particular installations may require a very low resistance. In such cases, FurseCEM™ provides a convenient and permanent solution.

By adding FurseCEM™ in place of sand and aggregate, to cement, a conductive concrete is formed. This electrically conductive medium has many applications in the electrical/construction industry including RF and microwave screening, static control and of course earthing for which it was specifically developed.

When used as a backfill for an earth electrode, FurseCEM™ impregnated concrete greatly increases the electrodes' surface area. For example, increasing the effective diameter of a rod from typically 15 mm to 200 mm, could lower its resistance to earth by as much as 50% (see graph below).



### Resistance versus diameter

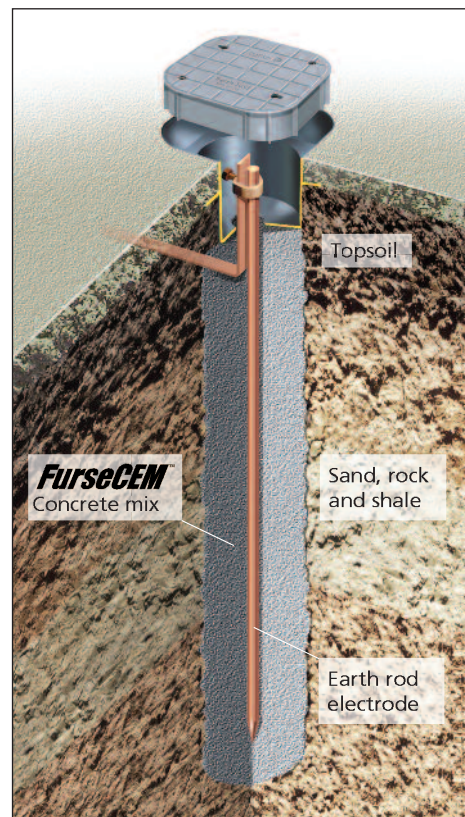




# FurseCEM™: a permanent solution to earthing problems

## Features and benefits

- **Permanent earth reading**  
Resistivity that will remain constant over the life of the installation without the requirement for maintenance
- **Constant volume**  
Regardless of water content, FurseCEM™ will not shrink or expand, thus maintaining constant contact between the earth electrode and the soil
- **Cost effective**  
Reduces drilling, saves on earthing materials, and requires no expensive maintenance
- **Non leaching**  
FurseCEM™ is a conductive concrete and therefore cannot be washed away
- **Chemically inert**  
Completely non-corrosive, and will not in any way damage earth electrodes, steelwork or concrete
- **Fast drying properties**  
Allows for quick and easy installation
- **Mechanical strength**  
Provides high compressive strength where required
- **Long shelf life**  
Can be stored for long periods without deterioration
- **Versatile installation**  
Suitable for use in boreholes and trenches



FurseCEM™ concrete used as a backfill for a conventional earth rod to achieve a lower earth electrode resistance.

## FurseCEM™ conductive aggregate

Description	Sack Weight	Part No.
FurseCEM™	25 kg	CM025
FurseCEM™ (supplied with cement)	25 kg	CM030

FurseCEM™ should be mixed in a 3:1 ratio by weight (not volume).

## FurseCEM™ versus other methods of earth improvement

**Chemical solutions** – such as copper sulphate, sodium carbonate, calcium sulphate and sodium chloride (table salt) mixed with charcoal are sometimes poured into the ground to improve earth readings, but these have the disadvantages of:

- being required in large quantities to make a difference
- requiring constant moisture to remain effective
- drying out if moisture is not present
- eventually leaching out of the soil, returning the earth resistivity to its former high value, unless regularly and expensively maintained
- causing corrosion of the earth electrode system and deterioration of concrete (particularly relevant to transmission towers).

**Chemical earth rods** – perforated metal tubes packed with a chemical compound are also sometimes used, but these:

- are costly
- are subject to leaching or washing away of the chemicals unless maintained

**Bentonite** – and certain other compounds intended to absorb and retain moisture around an earth electrode:

- rely on constant moisture to maintain volume and hence work effectively
- without moisture, drying and shrinkage occur, causing loss of contact with the surrounding soil, and a deterioration in the earth reading
- regular checking and/or maintenance may be required

**FurseCEM™** – is a non-corrosive permanent solution to earthing problems, providing a fixed earth reading that will not vary significantly regardless of seasonal factors, and without maintenance.