# Calcined Petroleum Coke Backfill

In Impressed Current Cathodic Protection systems, only a proper groundbed's engineering and installation will insure the correct system's performances.
In order to deliver the right amount of current even in high-resistivity soils, it is necessary to obtain low anodic resistances. This is reached by placing the anodes in a properly dimensioned groundbed which is filled with Calcined Petroleum Coke (CPC) backfill.
Calcined Petroleum Coke is a high-purity carbonaceous solid derived by a special thermal treatment (calcination) from fuel-grade petroleum coke that takes place into rotary kins. The high temperatures reached in calcination process remove excess moisture, extract the remaining hydrocarbons and modify the crystalline structure, resulting in a coke characterized by high density and extremely low electrical resistance.
A quality CPC backfill will ensure good conductivity in order to decrease anodic resistance and dramatically improve anode's life, but there are many other characteristics to be considered: a good backfill material for electrochemical application must have good corrosion resistance, high chemical stability, and of course the best possible easy-pouring and cavity–filling characteristics.
In fact, only a good compaction of the backfill material around the anodes will ensure the tight contact needed to ensure a firm electrical contact.
This property is dependent on CPC particle's size and shape distribution.
This is why Tecnoseal Industry S.r.l., strong of 30 years of field-proven experience, selects only high-grade Calcined Petroleum Coke backfill, insuring high performances at a reasonable price.
The technical characteristics of our standard CPC are listed below, but we can supply many types of CPS backfills according to Customer's specifications.
Our CPC is delivered in 25kg polyethylene bags.

**Technical Specifications**

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|---|---|
| **Size distribution** | DIN 51938 |
| Grain ø 3 – 4 mm | < 1 % |
| Grain ø 2 – 3mm | 35 % - 40 % |
| Grain ø 1 – 2 mm | 50 % - 55 % |
| Grain ø < 1 mm | 6 % max |
| **Weight density** | 2.1 g /cm3 |

**Chemical analysis**

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|---|---|---|
| **Sulphur** | 1,0% | ELTRA CS 500 |
| **Ash** | 1,5% | DIN 51903 |
| **Nitrogen** | 0,85% | Kjeldahl |
| **Volatiles** | 0,75% | DIN 51720 |
| **Moisture** | 0,4% | DIN 51718 |
| **Carbon** | 96,5% | Heraeus |