

CATHODIC PROTECTION OF BURIED TANKS

Cathodic Protection will prevent corrosion on buried or immersed tanks, it supplements the corrosion protection afforded by the coating system on a tank or pipe, improves tank design life and prevents deterioration of the tank or pipe. Cathodic Protection will also stop exposure to consequential loss, environmental damage and safety implications that could follow a leak of petroleum product.

DEFRA Ground Water Protection Code

Section 1.7 states: "Petroleum hydrocarbons are serious pollutants. Anyone allowing them to pollute groundwater or surface water risks penalties under the *Ground Water Regulations* 1998 and the *Water Resources* act 1991 along with significant remediation costs."

Section 3.17 states: "coatings should not be relied upon as the sole means of preventing corrosion. Other measures would include effective leak detection systems and, where appropriate, cathodic protection."

Section 4.6 states: "when assessing the risk to groundwater the authorities would regard the absence of cathodic protection as a factor that will increase the risk of a leak."

Section A3.15 discusses methods of assessing corrosion and states "Assessment of corrosion probability will help to decide if urgent action is required, e.g. the fitting of cathodic protection, tank lining or the replacement of a tank."

What is Corrosion?

There are many specific types of corrosion, but in relation to UST's it can be described as electro-chemical corrosion. This type of corrosion occurs due to the natural amount of electrical energy in the ground surrounding the UST, and the composition of the backfill that surrounds the UST. Some environments are far more corrosive than others, and that is why tanks leak at different ages.

What is Cathodic Protection?

Cathodic protection is an industrial application that has been in use since the 1800's. There are two types of system that can be utilised on a garage forecourt. A *Sacrificial anode system* is utilised on tanks that are electrically isolated from

site, and on new build sites, whilst *Impressed current* systems are installed on existing sites that are not isolated. Both of these systems inhibit external corrosion on tanks, whilst protecting the structural integrity of the tanks.

Benefits of having Cathodic Protection

- The systems that are incorporated on a UK forecourt such as wet stock records, strategic monitoring, remote monitoring and tank testing, are all systems that don't prevent anything happening, they just tell you when it has happened. Cathodic Protection is a preventative application, which stops the inevitable deterioration of steel tanks, and the potential associated costs of petroleum leaks.
- Tanks that have the benefit of Cathodic Protection do not suffer external corrosion, therefore they do not depreciate in value, and because of this they contribute to protecting the overall value of the business.
- Protection from leaks
- Protection from loss of stock
- Reduced exposure to Environmental liability
- Reduced safety liability

