# DEP in the Petro-chemical Industry

From refinery to petrochemical plants, the process of turning oil and gas into chemical products creates a wide variety of maintenance problems.
Whether in material handling, refining, chemical processing, heating and cooling, or storage and distribution, DEP has the expertise necessary to overcome many of these problems and help to prevent costly replacement of equipment and unplanned downtime.

Using products based on the latest polymer technology coupled with simple but effective application techniques, we are able to quickly and effectively restore worn plant to good working condition and protect equipment against many of the corrosion, wear and chemical attack problems that it would otherwise suffer.

The following are just some of the areas that we work in:

**Adsorber towers and amine regenerators**
The removal of hydrogen sulphide during the refining and conversion process necessitates the coating of adsorber towers and amine regenerators to avoid corrosion problems. Conventional coatings are unsuitable for this application as they are attacked by the amines used in the process, but using materials based on highly crosslinked multifunctional resins, DEP is able to provide long term protection to these pieces of equipment.

**Pumps**
The movement of material within a refinery or petrochemical plant means that pumps are essential pieces of equipment. By a combination of erosion, corrosion and chemical attack, the internal surfaces of pumps become worn over time resulting in reduced efficiency or ultimate breakdown. Using DEP's metal or ceramic repair materials, worn components such and impellors, casings, cut waters and flow straighteners can be rebuilt to original dimensions, and the use of DEP's protective coatings can prevent further corrosion and reduce wear. In this way, not only is the lifetime of the pump extended but its efficiency is improved, so resulting in reduced operating costs.

**Pipe supports**
Corrosion and wear of process pipework on pipe supports can be avoided by the bonding into place of metal wear pads using one of DEP's corrosion resistant rebuilding grade materials as a high compressive strength gap filling adhesive. This is a safer and more durable alternative to conventional welding techniques.

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**Flange face reforming**
Trapped water or corrosive fluids, crevice corrosion, bimetallic corrosion or steam cuts are all common causes of leakage from flanged joints which is both a safety and environmental hazard. As an alternative to the conventional approach of cropping off the nozzle and welding on a replacement, DEP can provide the means to reform the flange face *in situ,* thus avoiding many of the risks associated with cutting and welding. In addition, because of the corrosion resistant and electrically insulating properties of the repair material, the flange is protected against future attack.

**Heat exchangers**
Bimetallic corrosion, arising from contact of dissimilar metals, is a major problem with condenser tube sheets. Using DEP's non-electrically conducting materials, corrosion damage can first be rebuilt and the tube plate then coated to isolate the metals against galvanic cell creation. In this way the equipment is restored to its original condition and protected against deterioration in the future.

Similarly, wherever water and oxygen are present, corrosion is a potential problem which can be averted using DEP's range of erosion-corrosion barrier coatings on equipment such as condenser end plates, condensate return tanks, water boxes, etc.

**Tank base sealing**
Through exposure to the elements or condensation, water can accumulate at the bases of storage tanks or track underneath them causing corrosion problems. These can be avoided by coating with DEP's tank base sealing system. This tough but flexible water proofing system prevents ingress of moisture at the base of the tank and is an effective corrosion barrier.

**Secondary containment**
The need to prevent environmental pollution in the event of accidental leakage from tanks into secondary containment areas means that the internal lining of bunds is a well recognised procedure to ensure added security. To this end, DEP is able to offer a range of chemically resistant coatings to meet differing potential requirements.

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