Fluorocarbon Polymer Coatings

FLUOROSHIELD® Coating

Effective
and Economical
Corrosion Protection

GORE
Creative Technologies
Worldwide

FLUOROSHIELD® Coating - Effective and Economical Corrosion Protection

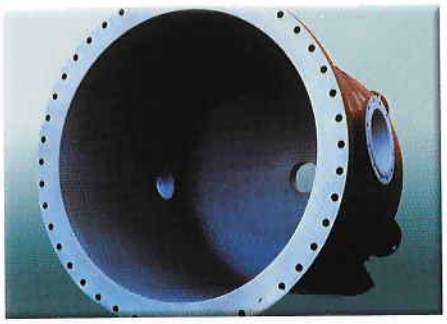


FIG 1

With increasing demands for improved chemical, thermal and mechanical properties of corrosion protection systems, development of new materials has become necessary for both process plant and pipework systems.

In order to meet these technical requirements and yet remain cost effective, FLUOROSHIELD coating was developed – a unique coating material for corrosion protection of vessels, tanks and ancillary equipment used throughout the chemical processing industries.

The main benefits of the coating, which can be applied up to 100 mils thick, are universal chemical resistance (0 to 14pH), operating temperature range of –310°F to +482°F* and full vacuum operation.

The FLUOROSHIELD Process

The outstanding results achieved with FLUOROSHIELD coating is due to the type of polymer employed and the specific method of application. The required coating thickness results by building up successive layers of polymer

FIG 2

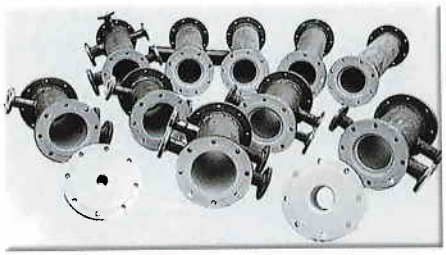


FIG 3

and baking the part after each coat. In this way a pore-free coating, which passes a 10 kV spark test, is achieved.

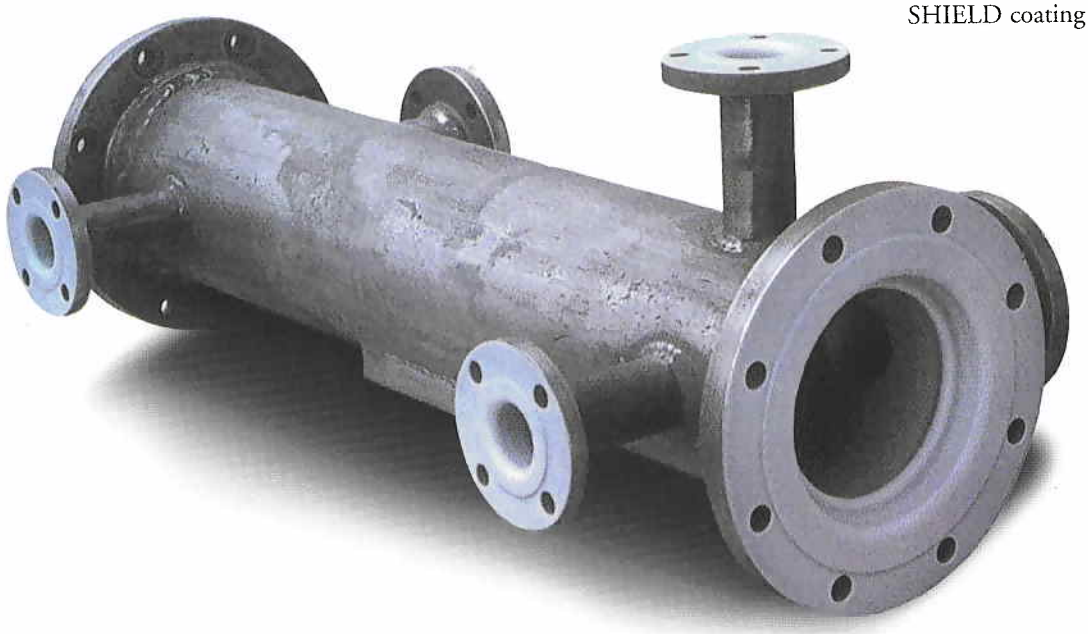
Industrial Applications

Three applications of FLUOROSHIELD coatings are shown in Figures 1, 2 and 3.

Fig. 1: The base unit of a column used in a chlorination process. The lining used initially experienced both thermal shock and mechanical damage.

Fig. 2: Two absorption towers handling wet bromine and chlorine vapours at a temperature of 130°F and atmospheric pressure which replaced glass steel.

Fig. 3: A number of column pieces with welded-in rings for packing support grids. High temperature, multi-purpose capability to coat geometrically complex shapes were the reasons for FLUORO-SHIELD coating being specified.



Manufacturing capability

Licensed FLUOROSHIELD applicator facilities are fully equipped and staffed with highly trained technicians. They can, therefore, offer the following services:

- Metal preparation – welding, grinding and grit blasting.
- Expert application of the coating.
- Accurate control of the sintering process.
- Stringent quality control at each stage of the process.
- Capability of handling large parts.

Service

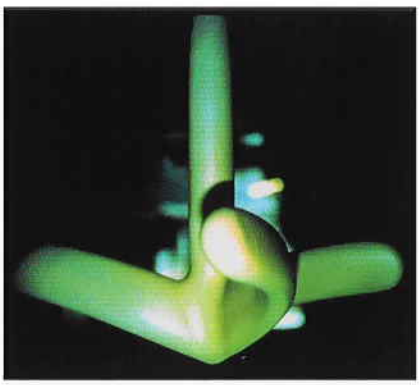
- Recoating existing equipment.
- On site inspection of part to be coated.
- Coating of new steel parts supplied by customer.
- Complete supply of new FLUOROSHIELD coated equipment.
- Good deliveries.
- Testing according to customers' specifications.
- On site repair of damaged coatings.

Field Repair Capability

Should mechanical damage occur during use, the coating can be repaired on site. As FLUOROSHIELD coatings "melt flow" at elevated temperatures, reliable repairs can be achieved quickly, reducing expensive down-time costs.

Quality Control

Quality control of the coating process entails continuous checking of raw materials as well as regular testing and improvement of production methods. Proper quality control of a coating can only be achieved by way of destructive testing. In order to achieve top quality, test specimens of FLUOROSHIELD coatings are applied, normally on the outside of the part. This is then subjected to a peel test.



After completing the coating process a 10 kV spark test ensures a pinhole-free coating. The finished part is then subjected to a careful visual inspection.