

# TECH ALERT

## Mechanical Integrity - Our Plants & Equipment

DuPont Performance Elastomers

October 2005

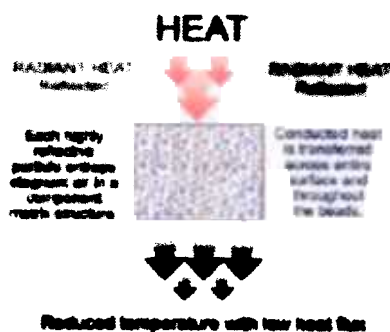
### Re: Temp-Coat 101

#### A Kick Against Corrosion Under Insulation... Thermal Insulation Coatings Also Come in at Lower Cost

The Pontchartrain plant recently demonstrated several successful applications of a thermal insulating coating system. This system is recommended to process temperatures down to 4°C (40°F) and temperatures up to 120°C (250°F).

The coating may be sprayed on and used instead of conventional insulation systems in situations that include preventing surface condensation or personnel protection from heat exposure.

The coating consists of hollow silica and ceramic micro-spheres suspended in acrylic latex binder. Refer to the sketch below.



One of the coating's principal advantages is eliminating conventional insulation, and therefore corrosion under the insulation. Repair, too, is relatively easy because the coating may be sprayed on.

#### Experience at Pontchartrain

The picture below shows the top head of an LPC reactor on a wagon just after the coating was applied. The head was insulated with hard insulation. During inspection, severe corrosion of the carbon steel under wet insulation was discovered. Metal repairs were made and the head was sandblasted, prime coated, and approximately 125 mils of thermal insulation coating applied. This insulation is for personnel protection and also maintains process temperature stability during rainstorms. It operates around 65°C (150°F).



The second picture shows CD reactor condenser well water piping. This step was an add-on job at the very end of a new project. It was very important that the cooling water remain at or within 1°C of the well head to the inlet of the condenser, which is approximately 400 feet away. The thermal insulation coating was

employed due to the urgency of starting up the new unit. We applied approximately 125 mils of coating to this 12 in 304 stainless steel header. The process was started up and the greatest temperature loss to date is only .5°C. Even during a rainstorm the temperature stays very stable.



We have also applied the coating to rail cars, quench tanks, and mole sieves.

## Specifications

The coating may be applied by painters using equipment to spray the product.

This coating is not a panacea for every situation and users are cautioned to contact the company specialists listed below to prevent misapplication. A corporate standard is being developed that provides guidance on the following key points:

- Surface preparation—it's essential as with any coating system
- Primer application— to prevent corrosion under the coating.
- Coating applications—per manufacturer's instructions and using appropriate equipment
- Total dry film thickness—do not exceed manufacturer's instructions; thicker is not necessarily better.

**Don Hendrix**  
**Ducom 536-5290**

### When to Involve DuPont Specialists:

- To ensure the right application technique—contact **Bob Guier** (Ducom 586-2538)
- When exceeding the current temperature range—contact **Joe Drumheller** (Ducom 999-2685)