Zerust® ReCAST-R™
CORROSION MANAGEMENT FOR ABOVEGROUND STORAGE TANK ROOFTOPS

The Problem
• Destroyed internal surfaces and support structures of storage tank roofs above the product layer from oils that contain sulphur emitting corrosive vapors.

• Unsafe operating conditions and environmental problems caused by aggressive pitting and crevice corrosion that create holes in the tank tops.

• Internal tank coatings are ineffective in preventing dangerous pitting and crevice corrosion, especially in the spaces between the roof and support structures.

• Stoppage of tank operations and necessitating periodic roof replacements impact petrochemical facilities causing capital losses and increased intangible costs.

The Solution
• Zerust ReCAST-R is the solution for this problem. The Zerust ReCAST-R system can be installed & deployed in aggressive operational internally corrosion environments.

• Dispensers attached to the tank roof deliver VCIs automatically into the tank vapor space forming a protective barrier layer.

• The barrier layer isolates the corrosive environment from the metallic surfaces that contact the vapor space.

• Proven to be effective in the unique and unpredictable internal environment resulting from vast variations in the:
  • Properties of the stored product
  • Ambient temperature ranges
  • Temperature of the stored product
  • Method of construction & design of the tank
  • Tank operational parameters

• Compatible with many additional systems that might be in place including: scrubbers, nitrogen blankets and vent systems.

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ReCAST-R Benefits

- Extend Tank Service Life.
- Protect Exposed Vapor Space Surfaces from Corrosion.
- Reduce Maintenance Costs.
- Reduce Stored Product Losses & Contamination.
- Eliminate the Need to Replace Carbon.
- Steel with Expensive Alternatives.
- Dispense Corrosion Protection Automatically.
- Prevent Acid Gas Corrosion in Vapor.
- Spaces of Aboveground Storage Tanks.

Duration of Protection

The Zerust® solution dramatically reduces the rate of corrosion by 4 to 5 times.

The expected life of the roof is increased from about 5-7 years to more than 25 years.

Product Use

- All metallic surfaces contacting vapor space within the tank roof can be protected.
- Side wall sections of the tank above the level of the stored product and support structures.
- Both new and old tanks. Even if corrosion has started, the solution, once deployed, inhibits further corrosion.
- In operational tanks. The inhibitor does not contaminate the stored crude oil products.

Solution Effectiveness

Operating Environment Inside the ASTs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range in 2-year Field Trial</th>
<th>Range in Laboratory Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient Temperatures, °C</td>
<td>22 - 40</td>
<td>20 - 55</td>
</tr>
<tr>
<td>Inside Tank Temperatures, °C</td>
<td>22 - 55</td>
<td>20 - 55</td>
</tr>
<tr>
<td>Relative Humidity, %</td>
<td>90 - 100</td>
<td>60 - 100</td>
</tr>
<tr>
<td>H₂S, ppm</td>
<td>20 - 50</td>
<td>1,000 - 4,600</td>
</tr>
<tr>
<td>O₂, %</td>
<td>10 - 21</td>
<td>10 - 21</td>
</tr>
<tr>
<td>SO₂, ppm</td>
<td>&gt;20</td>
<td>500 - 3,600</td>
</tr>
</tbody>
</table>

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