

## CREDENTIALS

40+ years of experience in corrosion prevention.

Client support in 50+ countries.

Chair key task group at NACE International.

## MEMBERSHIPS



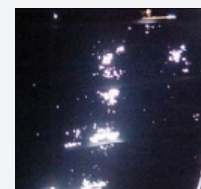
Zerust Flange Saver®  
Zerust ReCAST-R™  
2012: Winner of the MP  
Readers' Choice NACE  
Corrosion Innovation of  
the Year award

# 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.



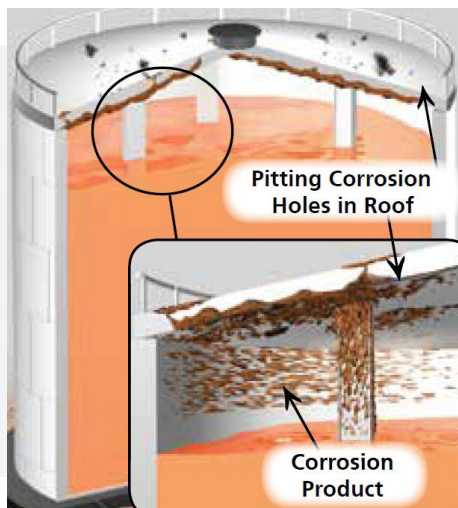
HOLES from inside an AST ROOF



Corrosion at a support beam

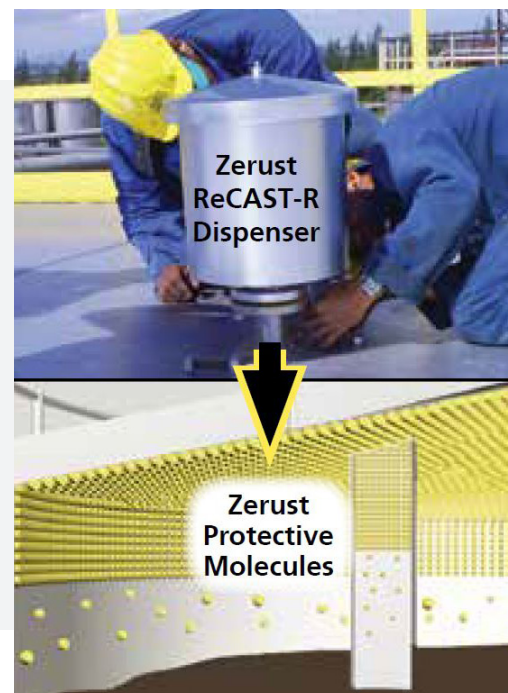


Holes in the roof of an AST



## 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.



## 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.
- Reduce Environmental Contamination.
- 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 Properties

Steel Cylinder Dispenser

VCI liquid

## Safety and Handling

Avoid contact with eyes and skin through use of safety glasses and gloves.

Use a dust mask to prevent inhalation.

See MSDS for more information.

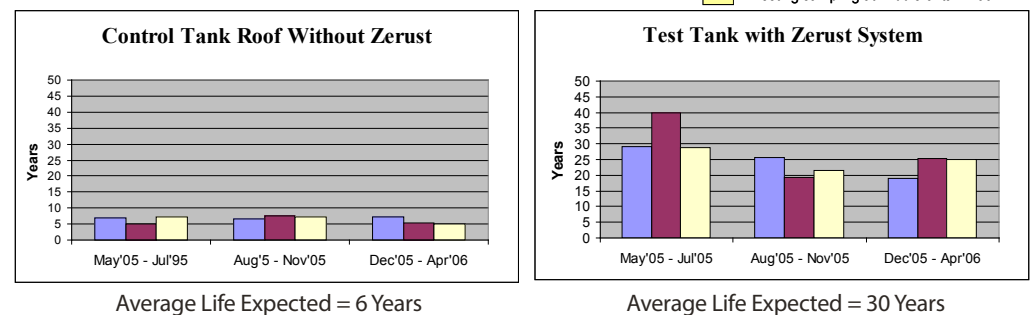
## Product Use



## 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

Parameter	Range in 2-year Field Trial	Range in Laboratory Tests
Ambient Temperatures, °C	22 - 40	20 - 55
Inside Tank Temperatures, °C	22 - 55	20 - 55
Relative Humidity, %	90 - 100	60 - 100
H <sub>2</sub> S, ppm	20 - 50	1,000 - 4,600
O <sub>2</sub> , %	10 - 21	10 - 21
SO <sub>2</sub> , ppm	>20	500 - 3,600

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