PROJECT PROFILE

Project:
Qatar Chemical Company (Q-Chem)

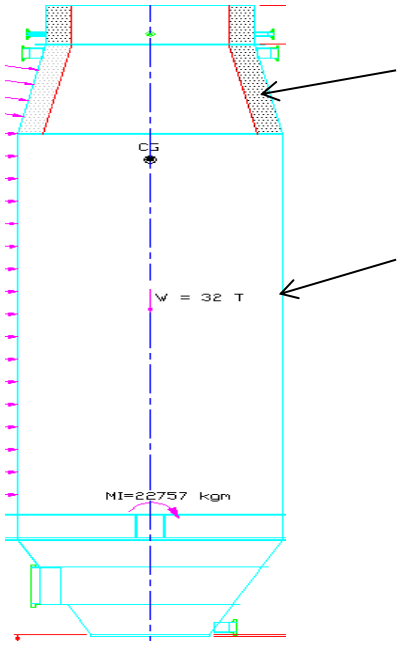
Location:
Qatar

Engineer:
In-House

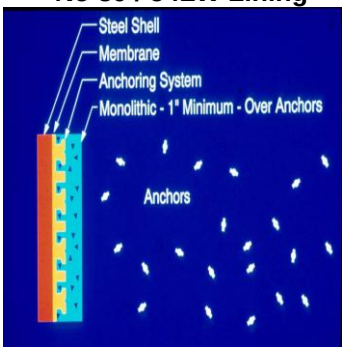
Applicator:
Cape East Refractories

Sauereisen Representative:
Virtual Scientific

Products:
- High Temperature membrane No. 89
- Lightweight Acidproof Concrete No. 54LW



No 89 / 54LW Lining



Environment / Exposure:
A major petrochemical manufacturer in Qatar needed a solution for a severe corrosion problem in the flue gas cooler of its incinerator. Although the incinerator had only been in operation for slightly more than nine years, its current construction material had deteriorated so significantly that the unit was in jeopardy of failure. The flue gas cooler is a vertical chamber of 8-mm-thick, half-Molybdenum steel with a diameter of 3.7 m and a height of 13.7 m. As 1,100°C flue gas moves downward through the chamber, water is injected into it by six spray nozzles near the top, forming water droplets which evaporate and cool the gas to 210°C by the time it reaches the bottom. The plant's engineering staff conducted a reliability analysis of the corrosion problem. Upon inspection, it was noted that the original thickness of the main shell had been reduced from 8 mm to only 4 mm due to heavy metal loss. At the assumed thickness of 4 mm and the present rate of corrosion, they concluded that the equipment would only be able to run for a period of six months unless the steel was protected both thermally and from the corrosive effects of the flue gas.

Project Details:
Based upon the operating conditions it was determined that a Sauereisen solution combining a minimum 3 mm application of High Temperature Membrane No. 89 and a 50 mm top-coat of Acidproof Concrete Lightweight No. 54LW secured by "T" anchors to the steel would provide the thermal and corrosion-resistant protection that would extend the life expectancy of unit for another two years.