Case Study

Oxidizer Media Replacement Restores Performance for Containers-Manufacturer

Operating Issue

A manufacturer of metal containers encountered major operating problems with their Eisenmann 40,000 SCFM Regenerative Thermal Oxidizer (RTO) that hindered their production performance and caused major concern regarding an upcoming air compliance test. The overall pressure drop across the system was high and the pressure imbalances negatively impacted their process flow-rates. Due to these unfavorable conditions, the manufacturer was forced to increase media bake-outs to once a month and in doing so obtained some insight on the issue. Temperature and pressure imbalances (in addition to opaque exhaust during the bake-outs), indicated severe plugging in their oxidizer's media.

Project Solution

Due to their ample experience in the can-manufacturing industry, Pollution System Solutions (PSSI) was sought to evaluate the issue and recommend and implement a solution. With their understanding of the processes, the lacquers/coatings, and the impact the RTO had on operations, PSSI conducted a thorough system appraisal and carefully analyzed the exhaust flow rates, VOC loading, particulate concerns and system specifications. Ultimately, PSSI recommended the installation of a higher-quality, layered, structured ceramic media. The recommended oxidizer media was specifically designed for greater resistance to condensate and particulate plugging.

PSSI led the turnkey project to supply new ceramic media, remove the existing media, install new media, oversee start-up of the RTO and coordinate the disposal of the spent media. Crews worked around the clock to minimize downtime and prevent impact on production. Work progressed in the following order:

- The top of the RTO was cut off and lifted away using a crane in order to facilitate quicker removal of the existing ceramic media and to provide better access for necessary internal repairs.
- The old stoneware was removed and stored in roll off bins until it could be analyzed and properly disposed.
- The existing support system and insulation were carefully examined for any signs of structural failure, degradation or media bypassing.
- Necessary repairs were made. Insulation was repacked around doors, openings, burners, etc.
- The new structured ceramic media was carefully and tightly repacked to the insulation in the chamber. Blocks of media were cut to the appropriate thickness to ensure a tight fit.
- The top was lifted and welded back in place.
- The site was cleaned, the refuse and old ceramic media were disposed of, and the system was placed back in service.

Customer Benefit

The project was completed within the expected time frame, and the system was back online to support production as needed. The new media performed well with an excellent temperature profile and diminutive pressure drop. The manufacturer successfully passed the required air compliance test and has not experienced similar issues with their media since.

Pollution Systems
2170 Buckthorne Place
Suite 160
The Woodlands, Texas 77380

Phone (713) 574-6661
Fax (713) 456-2666
Email: Sales@PollutionSystems.com
Web: www.PollutionSystems.com