

Oxidizer Media Replacement Restores Performance

Operating Problem

A metal container manufacturing company with an Eisenmann 40,000 SCFM Regenerative Thermal Oxidizer (RTO) was experiencing major operating problems. The overall pressure drop across the system was high and pressure imbalances were negatively impacting their process flow rates. It was also necessary to increasing the frequency of media bake-outs to a monthly basis. Temperature and pressure imbalances along with opaque exhaust during the media bake-outs indicated plugging in the media. In addition to the difficulties maintaining steady production with poorly performing oxidation equipment, there was a major concern of potentially failing an upcoming air compliance test.

Project Solution

Pollution System Solutions (PSSI) has a lot of experience in the can manufacturing market. We understand the processes, the lacquers / coatings, and the impact an RTO has on operations. PSSI carefully analyzed the exhaust flow rates, VOC loading, particulate concerns and system specifications and recommended the installation of a higher end layered structured ceramic media. The recommended oxidizer media was specifically designed for greater resistance to condensate and particulate plugging.

Implementation

PSSI led the turnkey project to supply new ceramic media, remove the existing media, install new media, oversee start-up of the Regenerative Thermal Oxidizer and organize disposal of the spent media. Crews worked around the clock to minimize the down-time and its associated impact on production. Work progressed as follows:



- 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, and the system was placed back in service.

Results

The project was completed within the expected time frame and the system was back on-line as needed to support production. The new media is performing well with an excellent temperature profile and little pressure drop. The plant successfully passed the required air compliance test.