

The Customer

The Company produces five million tons of steel annually. They sell to companies in the automotive, construction, and manufacturing industries as well as to steel processors and steel service centers.

The Process

Galvanized steel is supplied directly from the company's mill to the paint line where it is primed and finished with solvent based paints. The paints contain mixtures of toluene, MEK, ethyl benzene, xylene, naphtha and other materials including resins and silicones. The paint is applied in a continuous process to one or both sides of the steel. After the paint has been applied the steel is run through an oven to evaporate off the solvents.



The Problem

Safety and fire codes outline the design specification for the safe operation of solvent ovens. The codes limit the maximum solvent concentration allowable to 25% LFL under worst case conditions. If the LFL exceeds 25% continuous monitors must be used. The company's ovens were designed to run below the 25% LFL limit so a continuous monitor was not needed. However, for peace of mind, they wanted to be protected in case there was a sudden increase in the %LFL in their process. They had no experience with monitoring and needed to find an analyzer that could handle their challenging environment.

The Solution

After some investigation and education on the applicable NFPA codes, the company chose to install PreVEx Flammability Analyzers on their ovens. The analyzer has the unique ability to accurately measure the total flammability of all the constituents in the process and is not susceptible to coating or poisoning by resins or any other plasticizers or silicones. It is fully heated to keep all the elements in the oven atmosphere in the vapor state eliminating clogging and sample condensation. In addition, the analyzer features fast response, failsafe operation, low maintenance and easy servicing.

With the analyzers in place the Customer was able to confirm that their process was running below 25% LFL. However, they did find on several occasions their process increased to 35% LFL and on one occasion signaled an alarm at 40% LFL. The customer was extremely satisfied with the performance of the PreVEx analyzers — "They're awesome"!

