Wrong Fabric Material Caused Suction Leak in PVC Plant's Boiler Blower

Lower Cost Materials Doesn't Equate to Cost Savings

Application:

A boiler blower in a PVC plant. A PVC plant uses vinyl chloride as a primary chemical to produce PVC flake/pellet material. The PVC flakes/pellets are sold to companies that heat and mold PVC into a final product.

Problem:

A suction leak on the boiler blower's air inlet expansion joint was created when the expansion joint was pulled into the duct stream and tore from rubbing against the ductwork. The original joint was made of non-laminated Teflon®, which in this situation, is the incorrect material choice. A boiler blower air inlet operates under negative pressure, therefore the material chosen isn't strong enough for this application. Although this material is lower in price than other materials, it collapses under vacuum and punctures easily because it is very thin. The tear caused cold air to leak into the boiler blower, and dramatically reduced the efficiency of the boiler costing the operator money.

Solution:

The air enters the boiler preheated at approximately 320°F. The negative pressure is 83" in W.C. (water column). The temperature and negative pressure are primary concerns when choosing the correct expansion joint. For this application, Viton® is a better material option because of its rigged strength.

Under a negative pressure situation, the supplied Viton expansion joint won't be pulled into the ducting system because of its strength and it was installed with a very short breach opening. Holz provided a 1/8" Viton expansion joint with fiberglass reinforcement. The expansion joint was secured in place using Viton caulking with band clamps. When choosing the right expansion joint, material type is a critical component for longevity and effectiveness. Although the Viton is a bit more expensive, the life cycle of the joint is significantly increased, making it a cost saving purchase.

Experience the Difference!