

Challenge

Background

An industrial chemical customer needed a valve packing solution capable of meeting the Low E requirement of the EPA. Their recent consent decree issued by the EPA reduced their permissible emissions from block valves to less than 100 ppm. They were under time constraints imposed by the EPA to provide a plan and documentation of compliance to the consent decree to avoid hefty fines.



Chesterton helps chemical plants around the world meet stringent emissions standards.

Solution

Product

Chesterton 1724 PTFE die formed valve packing and live loading were selected to meet the emissions requirements.

The Chesterton team developed a test protocol to evaluate the emissions performance of PTFE packings by modifying the API

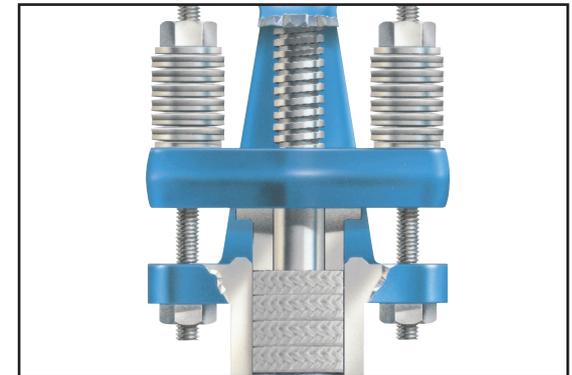
622 protocol. Chesterton conducted API 622 2nd Ed testing at a temperature of 400 F (204 C), while using the stipulated 1510 strokes, 5 temperature cycles and methane at 600 psig (40 bar g).



API 622 Test Fixtures

Results

- All leakage measurements were well below the maximum allowable requirement of 100ppm
- Average leakage during the ambient temperature static condition was 7 ppm with a maximum leakage reading of 25 ppm
- At the upper temperature average leakage during the static condition was 5 ppm with a maximum leakage reading of 10 ppm
- No re-torques were needed.



1724 Low E with Live Load Assemblies