Challenge

Background
An international valve manufacturer was introduced to Chesterton 1622 low emissions packing and wanted to obtain sealing performance in valves, based on the International Standards Organization (ISO) 15848-1 test protocol. Whereas the API 622 standard focuses on the packing performance regardless of the valve make and model, the ISO standard is a test of a specific valve performance with the packing installed. Both the valve and the packing become qualified as one offering.

Solution

Product
The test protocol selected was:
- On/Off (block) valve with 1500 mechanical cycles
- 100 bar g (1450 psig) at ambient temperature
- 90 bar g (1300 psig) at 200 °C (400 °F)
- The manufacturer selected a 3" 600 Class Gate Valve for the performance test

Results

Leakage measurements passed Class B requirements, indicating this flexible graphite packing achieved the sealing performance of a PTFE packing.

With readings consistently below Class B requirements, Chesterton 1622 had a maximum static leakage rate of 3.0 x 10^-6 atm cc/sec.

ISO 15848-1 Tightness Classes:
- Class B: ≤ 10^-4 mg/s-m: typically achieved with PTFE based packing or elastomeric seal
- Chesterton 1622 qualified at Class B