

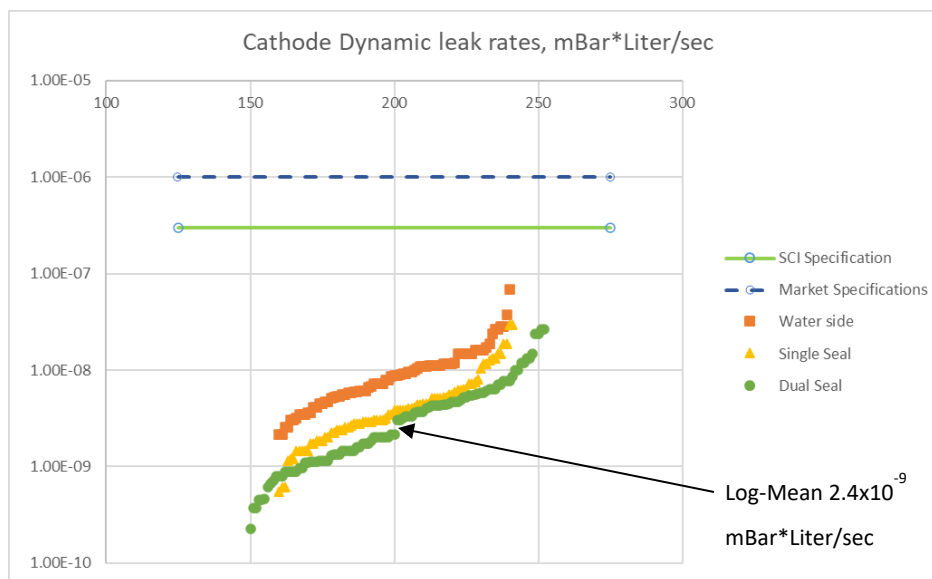
Rotary Cathode Vacuum Leak Performance

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Introduction - Rotary cathodes face aggressive operational requirements for dynamic vacuum leak rate performance in multiple coating markets worldwide. To meet this challenge, SCI has developed and deployed comprehensive leak check procedures in our manufacturing flow to validate the leak performance of our components.

Test Procedure - SCI tests the vacuum leak integrity of our cathodes during final assembly. Firstly, the dual seal and single seal vacuum leak rates are measured, and then the cooling water passage region is measured with pressurized helium. Leak rates are measured with a commercial leak check instrument that is routinely validated with a calibrated helium leak source. A defined procedure specifies base pressure, vacuum pumping, helium exposure, and drift time parameters to ensure that every cathode is tested in the same manner to our specification of 3.0×10^{-7} mBar*liter/sec helium.

Results - Test results across several months of production demonstrate that the leak performance of our components is robust to our specification requirements defined above. The slightly higher leak rate of the single seal test compared to the double seal test can also be seen in the test data. This is important to note as it enables the end user to safely complete their coating campaign even if the first of the dual seals has begun to wear and leak.



Conclusions - At SCI, we strive to continuously improve the capability and performance of our products and systems. By refining product leak testing procedures, we can demonstrate world class product performance and give customers and partners peace-of-mind for the integrity of the components they count on in their applications.