

Ceramic Thermowells

APPLICATION

A proprietary process that contained corrosive chemicals at high temperature required an accurate monitoring of the temperature. Metallic thermowells had failed quickly and were expensive to replace. Installation into the vessel was a threaded connection which was not fully exposed to the process conditions and did not show significant degradation.

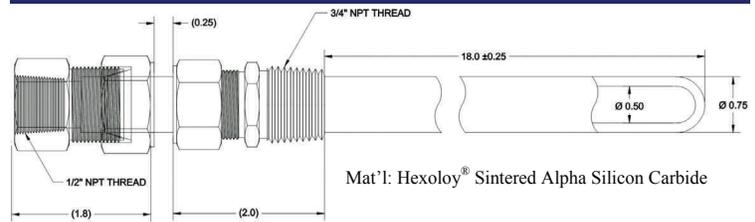


CHALLENGE

The challenge was to find a material that could withstand the chemicals and also provide for high temperature resistance. Exotic alloys offered some protection from the chemical environment but at the higher temperatures the corrosion rate was not acceptable. A suitable process connection also had to be identified. Fortunately, it was not fully exposed to the process fluid or the highest temperature so that allowed for more possibilities.



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Thermowell Made of Hexoloy®

SOLUTION

Burns engineers chose Hexoloy® sintered alpha silicon carbide for the thermowell. It is well suited for high performance thermowells where high temperature, corrosion, or erosion are present. Hexoloy SiC is the hardest commercially available material being 50% harder than Tungsten carbide. A list of properties include:

- *Excellent thermal shock resistance
- *Non-wetted by non-ferrous molten metals - Aluminum, Cu, Zn, Brass, etc.
- *Universal corrosion resistance
- *High thermal conductivity equal to stainless steel
- *High temperature strength - won't slump at 3000°F

The process and instrument connections consist of compression type stainless steel fittings. A standard RTD or thermocouple can be installed into the tube and is protected from the process environment. Hexoloy was an ideal solution for this process and offered the lowest total life cycle cost of all the options available.

For more information or to discuss your application, contact Bill Bergquist at 952-567-6413, 952-463-8384 mobile, Skype, bill.bergquist, or email to bbergquist@burnsengineering.com.