

PERSPECTIVE ON THERMAL BARRIER COATING FOR INDUSTRIAL  
GAS TURBINE APPLICATIONS

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Thermal Barrier Coatings (TBC's) have been used in high thrust aircraft engines for many years, and have proved to be very effective in allowing higher turbine inlet temperatures. TBC life requirements for aircraft engines are typically less than those required in industrial gas turbines. The use of TBC's for industrial gas turbines can increase if durability and longer service life can be successfully demonstrated.

This paper will describe current and future applications of TBC's in industrial gas turbine engines. Early testing and applications of TBC's will also be reviewed. Areas of concern from the engine designer's and materials engineer's perspective are identified and evaluated. This paper focuses on the key factors that are expected to influence utilization of TBC's in advanced industrial gas turbine engines. It is anticipated that reliable, durable and highly effective coating systems will be produced that will ultimately improve engine efficiency and performance.