

PROCESS FOR FORMING THERMAL BARRIER COATING RESISTANT TO INFILTRATION

ABSTRACT OF THE DISCLOSURE

A process for protecting a thermal barrier coating (TBC 26) on a component (10) used in a high-temperature environment, such as the hot section of a gas turbine engine. The process applies a protective film (32) on the surface (30) of the TBC (26) to resist infiltration of contaminants such as CMAS that can melt and infiltrate the TBC (26) to cause spallation. The process generally entails applying to the TBC surface (30) a metal composition containing at least one metal whose oxide resists infiltration of CMAS into the TBC (26). The metal composition is applied so as to form a metal film on the TBC surface (30) and optionally to infiltrate porosity (34) within the TBC (26) beneath its surface (30). The metal composition is then converted to form an oxide film (32), with at least a portion of the oxide film (32) forming a surface deposit (36) on the TBC surface (30).

Fig. 2