ABSTRACT

CALCIUM MAGNESIUM ALUMINOSILICATE (CMAS) RESISTANT THERMAL BARRIER COATING

A turbine engine component is provided which has a substrate and a thermal barrier coating applied over the substrate. The thermal barrier coating comprises alternating layers of yttria-stabilized zirconia and a molten silicate resistant material. The molten silicate resistant outer layer may be formed from at least one oxide of a material selected from the group consisting of lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium, scandium, indium, zirconium, hafnium, and titanium or may be formed from a gadolinia-stabilized zirconia. If desired, a metallic bond coat may be present between the substrate and the thermal barrier coating system. A method for forming the thermal barrier coating system of the present invention is described.

(FIGURE 1)