

Title (en)

MULTILAYER BOND COAT FOR A THERMAL BARRIER COATING SYSTEM AND PROCESS THEREFOR

Title (de)

MEHRSCHICHTIGE HAFTBESCHICHTUNG FÜR WÄRMEDÄMMSCHICHT UND VERFAHREN DAZU

Title (fr)

REVETEMENT DE LIAISON MULTICOUCHE POUR SYSTEME DE REVETEMENT A BARRIERE THERMIQUE ET PROCEDE Y RELATIF

Publication

**EP 1076727 A1 20010221 (EN)**

Application

**EP 99908549 A 19990226**

Priority

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Abstract (en)

[origin: WO9943861A1] A method of depositing a bond coat (16) of a thermal barrier coating (TBC) system (14) for components designed for use in a hostile thermal environment, such as turbine, combustor and augmentor components (10) of a gas turbine engine. The method yields a dense, bi-layer bond coat (16) having an adequate surface roughness for adhering a plasma-sprayed ceramic layer (18). The method generally entails depositing a first bond coat layer (16a) using a high velocity oxy-fuel (HVOF) technique employing a relatively fine metallic powder having a relatively narrow size distribution. Following heat treatment, a second bond coat layer (16b) is deposited on the first bond coat layer (16a) by air plasma spraying (APS) a relatively coarser metallic powder of particles having a relatively broader size distribution. The resulting second bond coat layer (16b) is characterized by a macro-surface roughness of about 450 to about 750 microinches Ra. Following a second heat treatment, the ceramic layer (18) is deposited that adheres to the bond coat (16) through mechanical interlocking with the rough surface of the second coat layer (16b).

IPC 1-7

**C23C 4/02**; **C23C 28/00**

IPC 8 full level

**C23C 4/02** (2006.01); **C23C 28/00** (2006.01)

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Citation (search report)

See references of WO 9943861A1

Cited by

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