

Title (en)

Abrasive surfaced article for high temperature service.

Title (de)

Mit Schleifmittel beschichteter Artikel für Hochtemperaturanwendung.

Title (fr)

Article à surface abrasive pour utilisation à haute température.

Publication

**EP 0166676 A2 19860102 (EN)**

Application

**EP 85630097 A 19850620**

Priority

- US 62442184 A 19840625
- US 62444684 A 19840625

Abstract (en)

A very thin abrasive material (26) on a substrate (24, 28) is comprised of ceramic particulates (30) contained within a metal matrix (36) The particulates extend fully through the matrix from the substrate surface (32) to the machined free surface (44) of the abrasive. In a representative 0.38 mm abrasive the particulates are sized nominally at 0.42-0.50 mm and have an aspect ratio of less than 1.9 to 1. This enables a high density of particulates, in the range 33-62 per cm<sup>2</sup>, while at the same time ensuring good bonding in that most of the particulates are fully surrounded by matrix. When the abrasive is applied to the tip of a superalloy gas turbine engine blade (20), about 10-50% of the matrix metal is removed after machining. This allows the machined ceramic particulates (30) to project into space and to thus better interact with ceramic abradable seals. In the preferred practice of the invention the particulates are alumina coated silicon carbide contained in a nickel superalloy matrix.

IPC 1-7

**F01D 5/20**; **B24D 3/06**

IPC 8 full level

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CPC (source: EP KR)

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Cited by

CH699312A1; AU583516B2; EP0273852A3; EP0238434A3; EP0254667A1; EP0509758A1; US5545431A; CN116201759A; EP0287370A1; US4808055A; US7799388B2; EP0467821A1; EP2971533A4; IT201900003691A1; WO2007108793A1; WO2010018174A1; EP3546703A1; WO2019185713A1; US8206792B2; US7799111B2; DE102008056741A1; EP3546702A1; WO2019185526A1; US8628597B2; WO2014151101A1; US8961632B2; US9926794B2; WO2020182349A1; EP2313615B1; EP2317078B1

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