

Title (en)

Method and device for thermal spraying of coating materials

Title (de)

Verfahren und Vorrichtung zum thermischen Spritzen von Beschichtungswerkstoffen

Title (fr)

Procédé et dispositif destinés à la pulvérisation thermique de matériaux de revêtement

Publication

EP 2562287 A3 20140521 (DE)

Application

EP 12181320 A 20120822

Priority

DE 102011081513 A 20110824

Abstract (en)

[origin: EP2562287A2] The method comprises melting a coating material, which is present in the form of spray wire, and thermally spraying the coating material by an atomizing gas and/or combustion gas. The melted coating material is displaced by coupling of ultrasound in vibrations during melting. The ultrasound is directly coupled to the coating material in which: an ultrasonic generator (6) is brought in direct contact with the melted coating material; and an ultrasound is formed by a modulation or pulse-like variation of the current of the power supply. The method comprises melting a coating material, which is present in the form of spray wire, and thermally spraying the coating material by an atomizing gas and/or combustion gas. The melted coating material is displaced by coupling of ultrasound in vibrations during melting. The ultrasound is directly coupled to the coating material in which: an ultrasonic generator (6) is brought in direct contact with the melted coating material; and an ultrasound is formed by a modulation or pulse-like variation of the current of the power supply and by a modulation or pulse-like variation of an atomizing gas- and/or combustion gas-gas stream, where: the current changes its direction; the current direction change is carried out within ten seconds to pico seconds; and a current strength is 0.01-3000 Å . The ultrasound is indirectly coupled to the coating material in which: an ultrasonic generator is brought in contact with the melted coating material via a wire guide; and an ultrasonic generator is arranged in a gas stream of the atomizer- and/or combustion gas in a flow direction or a nozzle is designed as the ultrasonic generator, which couples the ultrasound indirectly via the gas stream into the melted coating material. The ultrasound is present in a frequency range of 15 kHz to 10 MHz. The thermal spraying step is carried out by a wire flame spraying and an electric arc. The atomizing gas is preheated to increase the temperature during arc spraying process. An independent claim is included for a device for thermal spraying of coating materials.

IPC 8 full level

C23C 4/12 (2006.01); **B05B 7/20** (2006.01); **B05B 7/22** (2006.01); **B05B 17/06** (2006.01)

CPC (source: EP)

B05B 17/06 (2013.01); **C23C 4/12** (2013.01); **C23C 4/129** (2016.01); **C23C 4/131** (2016.01); **B05B 7/203** (2013.01); **B05B 7/224** (2013.01)

Citation (search report)

- [XAI] DE 102009031360 A1 20110105 - BAYERISCHE MOTOREN WERKE AG [DE]
- [XA] DE 3438634 A1 19860424 - PROIZV OB STROIMAS [SU], et al
- [A] GB 666315 A 19520213 - CORP SA EDRAS
- [A] DE 932107 C 19550825 - DELAPLACE RENE PAUL

Cited by

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Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2562287 A2 20130227; **EP 2562287 A3 20140521**; DE 102012107076 A1 20130228

DOCDB simple family (application)

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