

Title (en)
SURFACE TREATMENT METHOD FOR POWDERED METAL MATERIAL

Title (de)
OBERFLÄCHENBEHANDLUNGSVERFAHREN FÜR PULVERFÖRMIGES METALLMATERIAL

Title (fr)
PROCÉDÉ DE TRAITEMENT DE SURFACE POUR MATÉRIAU MÉTALLIQUE EN POUDRE

Publication
EP 3047925 B1 20220413 (EN)

Application
EP 14845712 A 20140917

Priority
• JP 2013193254 A 20130918
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Abstract (en)
[origin: EP3047925A1] Provided is a surface treatment method for safely, simply and quickly improving a powdered metal material to be used as a material in powder metallurgy, thermal spraying, or the like. The present invention involves: using a blast-machining device equipped with a dust collection means for spraying a spray powder and compressed air inside a work space and causing the same to collide with a collidable object, and removing and recovering dust by aspirating the interior of the work space; performing a blast treatment for repeatedly causing collisions at a spraying speed of 100-300 m/sec between a powdered metal material having an average particle diameter of 10-200[μ]m, and a medium material having a hardness equal to or greater than that of the powdered metal material; and detaching a surface oxide from the powdered metal material, and forming a fine-grain region which is near the surface of the powdered metal material and has a finer grain size than that of the center section thereof. The sintered metal obtained by sintering the powdered metal material subjected to the surface treatment has a concordant composition in which the fine-grain region and the large-grain region are concordantly arranged, and exhibits a balance of high ductility and high strength.

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Citation (examination)
JP H02243701 A 19900927 - DAIDO STEEL CO LTD

Cited by
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