

Title (en)
Method for manufacturing alloy blanks

Title (de)
Verfahren zur Herstellung von Legierungsformlingen

Title (fr)
Procédé de fabrication d'ébauches en alliage

Publication
EP 2405025 A1 20120111 (DE)

Application
EP 11168903 A 20110607

Priority
DE 102010031101 A 20100708

Abstract (en)

The process of producing molded alloy to provide a molten metal in a melting furnace with an alloying element or to raise the molded alloy content in the molten metal, comprises producing a molding mixture using the alloy component containing or existing alloying element, water and a binding agent, and converting the molding mixture to a molding alloy introducible in the melting furnace, where water and binder are added during the production of the molding mixture so that the molding mixture is pourable and the molding alloy has a curing time of 7 days at 20[deg] C. The process of producing molded alloy to provide a molten metal in a melting furnace with an alloying element or to raise the molded alloy content in the molten metal, comprises producing a molding mixture using the alloy component containing or existing alloying element, water and a binding agent, and converting the molding mixture to a molding alloy introducible in the melting furnace, where water and binder are added during the production of the molding mixture so that the molding mixture is pourable and the molding alloy has a curing time of 7 days at 20[deg] C and a strength of 5 N/mm 2>, pouring the molding mixture into a cast, bonding the molding mixture with the cast without applying external pressure, and demolding the resulting alloy molding. The molding mixture is added with: much water so that the molding mixture is self-leveled and the mixture has a slump of less than 21 cm; and the solvent and/or an accelerator. The weight ratio of water to solid is = 0.8 and/or the binder is a hydraulic binder such as cement. The binder is added in the molding mixture in 20 wt.% based on the entire molding mixture. A supporting grain with a grain size of 1.5 cm is added in the molding mixture. The support is sand grain that are present in 5-40 wt.%. The free surface of the molding mixture is: smoothed and sprayed with water immediately after the casting process; and provided with a moisture impermeable covering. The alloying element: for the production of the molding mixture into small-sized form is used with a mean extension of 0.5-5 cm; and is added in the mixture in dust or powder form with the grain size of less than 0.1 mm. The weight ratio of the alloying element in dust and powder form is 20:80 and 80:20. The molding mixture is cast into large form, whose inner space is divided into individual molds by high-webs, which are filled with the molding mixture in the casting so that the produced molded alloy is broken into individual lumps after hardening the molded alloys.

Abstract (de)

Die vorliegende Erfindung betrifft ein Verfahren zur Herstellung von Legierungsformlingen, um eine Metallschmelze in einem Schmelzofen mit wenigstens einem Legierungsbestandteil zu versehen oder dessen Anteil in der Metallschmelze zu vergrößern, wobei eine Formlingsmischung unter Verwendung des den wenigstens einen Legierungsbestandteil enthaltenden oder daraus bestehenden Legierungselements, von Wasser und eines Bindemittels hergestellt und die Formlingsmischung zu einem in den Schmelzofen einbringbaren Legierungsformling verarbeitet wird, wobei bei der Herstellung der Formlingsmischung mindestens so viel Wasser zugesetzt wird, dass die Formlingsmischung gießfähig ist, und dass mindestens so viel Bindemittel zugesetzt wird, dass der aus der Formlingsmischung hergestellte Legierungsformling nach spätestens sieben Tagen Abbindezeit bei 20°C eine Festigkeit von wenigstens 4 N/mm 2 , vorzugsweise wenigstens 5 N/mm 2 , hat, und dass die Formlingsmischung in eine Gießform eingegossen wird und darin ein Abbinden ohne Anwendung äußerer Druckeinwirkung erfolgt und schließlich der so entstandene Legierungsformling entformt wird.

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CPC (source: EP US)
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