

Title (en)
PROCESS AND DEVICES FOR PRODUCING SAND MOULDS BOUND WITH SYNTHETIC RESIN FOR METAL CASTING.

Title (de)
VERFAHREN UND VORRICHTUNGEN ZUR HERSTELLUNG VON KUNSTHARZGEBUNDENEN SANDFORMKÖRPERN FÜR DEN METALLGUSS.

Title (fr)
PROCEDE ET DISPOSITIFS DE PROTECTION DE MOULES EN SABLE LIES PAR RESINE SYNTHETIQUE ET UTILISES POUR LE COULAGE DE METAL.

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Application
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Abstract (en)
[origin: WO9218267A1] A sand core bound with a synthetic resin for metal casting and formed in a core box is hardened by passing a hardener gas through the core. If the hardener gas is a component of a two-component resin, large quantities of hardener gas reactant are required to harden the resin binder. Conventionally, a very large excess of such a hardener gas in a mixture of hardener gas and carrier gas is passed through the sand core in a single pass and must then be removed, at considerable expense, from the waste gas, to prevent environmental pollution. In the invention, on the other hand, only a slight stoichiometric excess of hardener gas is used and therefore the waste gases can be vented directly to atmosphere. To this end, the hardener gas is pumped (12) in several passes through the core boxes (1) in a highly evacuated, closed-circuit line system (1, 11, 15). Before gassing is begun, a vacuum container (15) is evacuated by the pump (12). When air spontaneously enters the vacuum container (15), the core box (1) is evacuated and sucks in the hardener gas as a mixture of hardener gas and air or, preferably, the liquid hardener substance sprayed into an evaporator. In practical series operation of a core shooter for producing sand cores weighing 5 to 22 kg using resol as the resin binder and methyl formate as the hardener, the quantity of excess hardener used was 0 to 70 %.

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B22C 9/123 (2013.01)

Citation (examination)
ASM INTERNATIONAL HANDBOOK COMMITTEE 'Metals Handbook, Ninth Edition. Volume 15, Casting. 'September 1988, ASM INTERNATIONAL, METALS PARK, OHIO, USA see pages 214-221: Resin Binder Processes' see pages 220-221: 'The phenolic ester cold-box (PECB) process'

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