Title (en)

Device and method for tempering foundry cores

Title (de)

Vorrichtung und Verfahren zur Giesskerntemperierung

Title (fr)

Procédé et dispositif destinés à l'équilibrage des températures du noyau de fusion

Publication

EP 2230035 B1 20140305 (DE)

Application

EP 09003932 A 20090319

Priority

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Abstract (en)

[origin: EP2230035A1] The apparatus comprises a tempering medium flow channel system, which has a tempering channel in the foundry cores (K 1, K 2, K 3, K 4, K 5, K 6, K 7, K 8, K 9, K 1 0, K 1 1, K 1 2, K 1 3, K 1 4, K 1 5, K 1 6, K 1 7, K 1 8, K 1 9, K 2 0) to be tempered with an associated inlet line and an associated outlet line, a pressure determining device for determining a tempering medium flow pressure in the inlet line, a tempering medium return pressure in the outlet line and/or a difference between the flow pressure and the return pressure, and a temperature control device. The apparatus comprises a tempering medium flow channel system, which has a tempering channel in the foundry cores (K 1, K 2, K 3, K 4, K 5, K 6, K 7, K 8, K 9, K 1 0, K 1 1, K 1 2, K 1 3, K 1 4, K 1 5, K 1 6, K 1 7, K 1 8, K 1 9, K 2 0) to be tempered with an associated inlet line and an associated outlet line, a pressure determining device for determining a tempering medium flow pressure in the inlet line, a tempering medium return pressure in the outlet line and/or a difference between the flow pressure and the return pressure, and a temperature control device designed to evaluate the determined flow pressure, the determined return pressure and/or the determined difference pressure and to generate a core-breaking information, fine leakage information and/or a tempering channel-narrowing information. The temperature control device is indicatively designed for pressure evaluation, so that it compares the determined flow pressure with a definable flow pressure-maximum limit value, the determined flow pressure during a casting process with the determined flow pressure between respective two casting processes, the determined flow pressure during a casting process with a definable return pressure-minimum limit value and/or with the determined return pressure between respective two casting processes and/or the determined difference pressure during a casting process with a definable difference pressure-maximum limit value and/or with the determined difference pressure between respective two casting processes. The temperature control device is designed to compare the determined difference pressure during the casting process with a first difference pressure-maximum limit value as a warning limit value and with a comparatively larger second difference pressure-maximum limit value as interference limit value, and to generate the tempering channel-narrowing information when the determined flow pressure exceeds the associated maximum limit value. The apparatus assess the temperature control device as fine leakage information when the determined return pressure during the casting process lowers more than definable measurement and remains the determined difference pressure under its maximum limit value and/or deviates less than definable measurement from the determined difference pressure between the casting processes. The apparatus assess the temperature control device as core-breaking information when the determined difference pressure during the casting process exceeds the associated maximum limit value and lies around the definable measurement over the determined difference pressure between the two casting processes. The temperature control device is designed for controlling a continuous flow of the tempering channel of the foundry core with the tempering medium during and between the successive casting processes, and generates a stopping signal for suppressing a next casting process when it is concluded by the pressure evaluation of core-breaking leakage, fine leakage and/or tempering channel narrowing. An independent claim is included for a method for tempering foundry cores.

IPC 8 full level

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EP2537607A1; WO2012175287A1

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