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On the question of improving the low-frequency method of processing metal melts

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Abstract

Considered the removal of pseudocavity (suction gas into the melt) and more grinding conglomerates of powder additives in the piston of the low-frequency processing of metallic melts due to the use of such methods as selection of the gas atmosphere, changing the charge composition and temperature of melting, the inclusion in the process of ultrasonic or electro influences. Based on the analysis of the mathematical model of immersion of the gas bubble deep into the melt during its low-frequency processing, taking into account the action or possible change of these influence factors, the efficiency of using this or that reception is estimated and the choice of the method for improving the low-frequency method is made. When considering the mathematical model, the gas atmosphere over the melt is associated with the density of the gas bubble, the charge composition – with the melt viscosity, low – frequency effect-with the harmonic varying pressure difference under the piston and over the piston and with sound pressure. Ultrasonic and electric pulse effects are also described using sound pressure in the melt.

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