

Influence of chemical composition, form and morphology of surface of NaCl grains on mechanical properties of water soluble cores

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With development of a number of branches (automobile industry) the demand of increasingly more complex and more exacting castings that are mechanically cleanable with difficulties only is growing. Application of the technology of disposable water soluble cores from inorganic salts is one of solutions of troublesome problems of removing the cores from places hardly accessible for cleaning. Solubility in water enables reversal crystallization of the salt from the water solution what is a precondition for forming a closed ecological cycle of the core manufacture. Application of salt cores can be met in processes of low-pressure casting, gravity casting in dies, and in connection with just running research project in pressure castings from Al-alloys. The article brings results of checking the cores made from cooking salts (NaCl) predominantly available on the Czech market. It is aimed at two main technologies (shooting and high-pressure squeezing) of their manufacture and it investigates the influence of chemical composition, form and morphology of the grain surface on mechanical properties (bending strength) of water soluble salt cores for their application for high-pressure die casting of Al-alloys.

Keywords: NaCl, p.a., cooking salt, salt cores, non-ferrous metals

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