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The Research of Stresses in the Molds of Injection Molding Machines

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Abstract

The article presents the analysis of casting molds failure under pressure. It was found that the main causes are physical and chemical activity of the casting alloy, the nature of the used materials and the intensity of the cyclic temperature-power loading. The technique of the stress assessment in the molds is presented. The schedule of distribution of axial and tangential stresses in the cross section of the sprue bushing in various stages of compression is made up. It is found that the maximum level of stress occurs at the contact surfaces during the filling and the subsequent brief exposure of the melt in the mold.

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Keywords: mold; stresses; injection molding.

1. Introduction

The process of casts forming under pressure is characterized by high characteristics of cyclic temperature-power loading of molds and is accompanied by an active interaction of tool materials with surface-active media. The researches have established some specific reasons for the low efficiency of die toolings for the solid-liquid punching, depend on physico-chemical activity, the nature of used materials and the intensity of cyclic temperature-power loading [1].

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