

Creep of heat-resistant low-alloy cast iron during bending and sheering

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Heat-resistant low-alloy cast iron is widely used in modern transport diesel engines to produce heavy loaded cylinder-piston group parts operating under variable load conditions. Despite their short duration, high temperatures cause development of irreversible creeping deformation in such details. As a result, when the engine stops these details suffer from residual tensile stress. To calculate the level of residual stress, it is necessary to have a conditional equation suitable for calculations which take creep at variable temperatures and voltages into account. Applying a theoretical solution, we examined the adequacy of a conditional equation received from tension and compression test results by comparing the results of the specimen tests with pure bending and pure sheering. The possibility of using a conditional equation to conduct calculations for details from heat-resistant cast iron in creep conditions is confirmed.

Keywords: *heat-resistant cast iron, creep in tension, creep in compression, conditional equation*

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