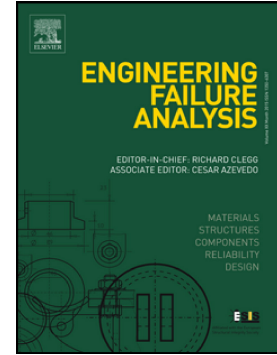


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Failure analysis of gears, shafts and keys of centrifugal washers failed during life test

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Abstract

This work presents a failure analysis of a transmission gearbox used in a motor of a food centrifugal dryer tested with a life test procedure developed by Electrolux Professional. The test apparatus consisted in a prototype of the centrifugal dryer where some aluminum cylinders were installed on the drying basket in order to simulate the maximum loads, that in-service are transferred by the food processed in the dryer to the transmission system investigated in this work. This system, is employed for the motion of the basket through an electric motor. The aim of this test apparatus was to simulate the service conditions of the components in order to evaluate their mechanical resistance and to verify that the life of the appliance is consistent with the project specifications. Moreover, the life-test presented in this paper can be used to test new materials for this specific application. The gear and the shafts analyzed in this work are made of low-alloyed steel heat treated by induction quenching followed by tempering.

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