

ABSTRACT

The aim of this dissertation titled, “Analysis of the aluminium extrusion process and ways to extend the lifetime of extrusion dies”, is the study and the analysis of the extrusion process and the factors that constitute it that are aimed to identify the various problems encountered in an aluminium industry and finding the best solutions to extend the lifespan of the die.

In the introduction, the procedure and the various types of extrusion are stated.

In chapter 1, the plastic deformation and the flow of metal are analyzed.

In chapter 2, some conditions and variables related to the mechanics of aluminum extrusion are analyzed.

In chapter 3, an in-depth reference to the main subject of the thesis is provided, which is the extrusion die.

In chapter 4, some major problems that have to do with the finished products are presented.

In chapter 5, methods are mentioned and the results of last year’s test are illustrated. These are used to extend the lifespan of the die.

In chapter 6, a reference is made to the conclusions of the thesis and some solutions are suggested which aim to optimize the extrusion die’s lifespan.

Keywords: [extrusion, extrusion die, friction, wear, guiding angle, nitriding, PVD CrN coating]