

## **ABSTRACT**

The purpose of the following dissertation, with subject title, analysis of the the aluminium extrusion process and ways to extend the lifetime of extrusion dies, is the in depth understanding and analysis of the extrusion process and the affecting parameters that constitute it, with the ultimate goal the identification of the problems of the extrusion process, in an aluminium industry.

Through the introduction, the process steps and many different types of extrusion are mentioned, with a comparison of the extrusion types, citing some advantages and disadvantages of the many types.

In chapter 1, the plastic deformation, flow of the aluminium and flow types are referenced and analysed.

In chapter 2, the meaning of the extrusion is in depth analysed, with the explanation of many terms that constitute the mechanics of the process.

Chapter 3, consists the most important sector of the aluminium extrusion, referred to the definition, drawing and other parameters that constitute the extrusion die.

In chapter 4, some problems that make the work of the aluminium industry difficult are mentioned, trough the extrusion process.

In chapter 5, follows the experimental part of the dissertation, with all the process of the experiment, and the preparation that should be done, in order for the experiment to be properly and successfully conducted.

Summarizing, chapter 6, is conducted by some conclusions about the dissertation subject, and some suggestions about the extension of the extrusion die life.

**Keywords:** [extrusion, extrusion die, friction, dead metal zone, extrusion force, guiding angle]