

ABSTRACT

The present thesis revolves around the field of conveyor chain systems and concerns the system which is first examined and then created for the safe transfer of LPG cylinders, mostly in the supermarket areas. In the following chapters, the steps that had to be taken are presented analytically; from the primary step of evaluating the need for this system until the final steps of maintenance and the resulting construction of such a system, so that it is easily operated by people. After the objectives of the thesis were given, all the necessary parameters that can be determined for factors such as safety and ergonomics are analyzed. This analysis along with proper research and organization contribute to the formulation of a possible solution. Regarding the above, the apparatus which was created has theoretical dimensions 5m length and 5cm width. The chain conveyor system for LPG cylinders facilitates and benefits people in the process of transferring the LPG cylinders, from and towards the supermarket. Some of the parts that were taken into consideration for the creation of the apparatus were taken from the standardized lists and charts of “Renold” catalogues. Hence, all the patterns of safety and durability of these parts are considered to be included. As far as the parts that had to be designed and created from the beginning are concerned, these were designed with the proper analysis and design in order to ensure their safety and durability. All the calculations and the design were done with “AutoCAD 2013” software and mostly with the aid of “SolidWorks 2016”. Finally, the designs were processed with “Rendering”, which aims at the 3D illustration of the real life tools that were created.

Keywords: chain conveyor systems, LPG cylinder, parameter analysis, “Renold” lists and catalogues, stress analysis and desing.