1st INTERNATIONAL WORKSHOP
ADVANCES IN CLEANER PRODUCTION

IV SEMANA PAULISTA DE P+L
CONFERÊNCIA PAULISTA DE P+L

Ecodesign Methods focused on Remanufacturing

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Abstract

The consumption and production of products throughout its lifecycle is at the origin of most of the pollution and resources depletion that our society causes. The environmental impact of products at the end of their life can be considerably reduced by the application of remanufacture. Encouraged by environmental legislation, such as the WEEE in Europe, and motivated by aftermarket reasons, the importance of the remanufacture industry has increased lately, worldwide. Remanufacturing is defined as the transformation of an end-of-life product into an 'as good as new' product. The remanufacturing process includes several stages, including product disassembly, cleaning and identification of parts, parts recovery, testing and product re-assembly. To implement remanufacturable products successfully, they ought to been previously designed for that purpose. Thus, the initial phases of the product development process must consider the aspects of remanufacturing such as disassembly opportunities, facilities and reverse logistics. The consideration of theses aspects can be made by means of Ecodesign, which is a proactive posture of environmental management that, by integrating environmental concern to the product development process, aims to reduce the total environmental impact of products throughout its entire lifecycle, without compromising other important aspects, such as quality, costs, ergonomics, aesthetics, etc. There are several Ecodesign' methods that focus on the remanufacturing process and can be successfully applied in order to obtain more sustainable products, minimizing its adverse environmental impacts. The aim of this paper is to present some Ecodesign methods that focus on end-of-life strategies, including, among others, remanufacturing. It is important that all end-of-life strategies be related, since not all products' components can be remanufactured. Hence, other end-of-life strategies, such as recycling and reuse, should be made possible and viable.

Keywords: *Ecodesign, Remanufacture, methods.*