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Environmental and Economic Assessment of the Replacement of Grease based on Mineral Oil for Fiberglass fabric with Teflon® as Release Agent in Dubbing Process

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Abstract

The search of the companies by cleaner and more sustainable technologies has grown considerably. An alternative is the Cleaner Production actions (CP), aimed at non-generation, minimization or recycling. In this sense, this work aims to seek and apply CP concepts in the dubbing process of a company located in the metropolitan region of Porto Alegre. In this particular case, dubbing, also known as collage, is held in a cabine with cubic format, whose sticky material is polyurethane adhesive. As the adhesive is applied onto the substrate, which is done with a specific gun, as a result of that a mist formation occurs and therefore its deposition concentrate on the walls of the cabin. Eventually adhesive layers are formed which must be removed and discarded as waste. In order to prevent sticking and facilitate removal of this residue, the walls were covered with grease based on mineral oil, and which turned the contaminating residue as class I (dangerous). With stocks of CP, we sought to eliminate the need of grease. To assess the feasibility of modifying the bonding process, the economic and environmental evaluation was performed. A better option would be to remove grease by a product that act in the same way. A release agent was tested: fiberglass fabric with Teflon, an excellent non-stick. As the tests showed satisfactory results, the product was applied to the walls of the cabin and began to replace the grease. Thus, we observed a reduction of costs, reduction in cabin cleaning time, not generating waste grease, possibility of reuse of polyurethane residue, eliminating contact between the operator and grease, transforming a residue class I (dangerous) in a residue class II (not inert) and financial return of the amount invested in 1.1 months.

Keywords: *Cleaner production, Collage Booth , polyurethane adhesive, grease, Teflon®.*
