

ABSTRACT

Set-up time refers to the duration required to prepare a machine or workstation before operation. Several factors influence the efficiency of set-up time, including operator skill and experience, availability of set-up tools, machine configuration, and routing. Among these, tool availability plays a critical role, especially when different processes require specific equipment. In the color matching process at PT Halim Samudra Interutama, a significant portion of time—49,87% of the total process duration—is consumed by set-up activities, particularly in locating cleaning tools and washing canvas. This final project focuses on minimizing set-up time in the color matching process by designing a supporting tool.

The Single Minute Exchange of Die (SMED) method is used to analyze the sequence of set-up activities and formulate a need statement for improvement. Based on this, a product development stage is implemented to realize the proposed solution. The resulting design is a combined cleaning trolley and canvas rack. Analysis shows that the total set-up time was reduced to 4.742,72 seconds or 1,3 hours, accounting for only 27,62% of the overall color matching process time.

This final project presents a tangible and measurable solution that outperforms the previous set-up condition. The proposed improvement increases productive time by shortening the operational cycle, thereby enhancing machine utilization and overall productivity. It is expected that this project will serve as a reference for future innovations in optimizing the company's operational assets.

Keywords: *Lean Manufacturing, Single Minute Exchange of Die, Color Matching, Set-Up Time*