

Abstract

To create sustainable for industrial organization in current situation, an ability to improve productivity, quality, efficiency, and reducing costs is the key success for competitiveness. In practice, it is widely believed that The Thailand Quality Award (TQA) can be employed as the good criteria to evaluate the organization for improvement.

The objective of this research is to improve an efficiency of LED Array manufacturing process by using the criteria of The Thailand Quality Award (TQA), focusing on process improvement. This research gathered related data in a case study company and then employed the gap analysis method to identify a critical problem for improvement.

In experiment, the result from gap analysis was prioritized by amount of defect. It shows that a critical problem was Encapsulation leakage, which had two main factors e.g. the quantity of pre-deposited epoxy on the frame material, and the change in design of the frame material from H-frame to block- frame. An improvement by using the six sigma method was then proposed. Some dispensed silicone adhesive was applied instead of pre-deposited epoxy. The result from experiment shows that the quantity and the position of the adhesive can be controlled more effectively, and it reduced the defective rate from Encapsulation leakage for 3.86% which saved cost for 27,020 Baht per quarter. This improvement are not only reducing defect and saving cost, but also improving the customer satisfaction, employee development, and competitiveness.