

ABSTRAK

Penelitian di PT Rekindo Global Jasa Departemen *Quality Control* ini bertujuan untuk mengidentifikasi jenis cacat yang berpotensi menyebabkan kegagalan produk, menganalisis tingkat risiko setiap jenis cacat, serta menentukan prioritas perbaikan yang paling efektif pada proses produksi di PT Rekindo Global Jasa. Penelitian ini merupakan studi kualitatif dengan pendekatan analisis risiko, menggunakan data historis dan observasi langsung selama periode tertentu, serta wawancara sebagai dasar pengolahan. Metode yang digunakan meliputi *Failure Mode and Effect Analysis* (FMEA) untuk menentukan tingkat risiko melalui nilai *Risk Priority Number* (RPN), *Decision Making Trial and Evaluation Laboratory* (DEMATEL) untuk menganalisis hubungan pengaruh antar jenis cacat, serta *Technique for Order Preference by Similarity to Ideal Solution* (TOPSIS) untuk menentukan alternatif perbaikan terbaik berdasarkan bobot dan kriteria terkait. Hasil penelitian menunjukkan bahwa cacat karet bergelombang pada permukaan merupakan risiko tertinggi dengan nilai RPN awal sebesar 240. Selanjutnya, analisis TOPSIS menghasilkan Alternatif 2, yaitu penguatan kontrol kualitas selama proses produksi, sebagai rekomendasi utama dengan nilai preferensi tertinggi sebesar 0,592. Strategi ini dinilai paling efektif dalam meminimalkan risiko cacat karena mampu meningkatkan deteksi dini dan pengendalian kualitas pada setiap tahapan proses. Temuan ini memberikan kontribusi bagi perusahaan dalam menyusun strategi peningkatan kualitas yang lebih terarah.

Kata kunci : Cacat produksi, DEMATEL, FMEA, TOPSIS, Alternatif perbaikan.

ABSTRACT

This study was conducted at the Quality Control Department of PT Rekindo Global Jasa with the aim of identifying defect types that have the potential to cause product failure, analyzing the risk level of each defect type, and determining the most effective improvement priorities in the company's production process. This research employed a qualitative approach with risk analysis methods, utilizing historical data, direct observations during a specific period, and interviews as the basis for data processing. The methods applied included Failure Mode and Effects Analysis (FMEA) to assess risk levels through the Risk Priority Number (RPN), Decision-Making Trial and Evaluation Laboratory (DEMATEL) to analyze the causal relationships among defect types, and Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) to determine the best improvement alternative based on relevant criteria and weights. The results indicated that the defect of wavy rubber surfaces represented the highest risk, with an initial RPN value of 240. Furthermore, the TOPSIS analysis identified Alternative 2, namely strengthening quality control throughout the production process, as the most recommended improvement strategy, achieving the highest preference value of 0.592. This strategy was considered the most effective in minimizing defect risks by enhancing early detection and quality control at every stage of the production process. These findings provide valuable insights for the company in developing more focused and effective quality improvement strategies.

Keywords: Production defects, DEMATEL, FMEA, TOPSIS, Improvement alternatives.