ANALISIS POTENSI KECELAKAAN KERJA DAN STRATEGI PENGENDALIAN RISIKO DI INDUSTRI BATIK DENGAN PENDEKATAN FTA DAN HIRARC
(STUDI KASUS : UMKM BATIK MAHKOTA LAWEYAN)

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Abstrak

Keselamatan dan kesehatan kerja (K3) merupakan aspek penting dalam industri, termasuk industri batik yang masih bersifat tradisional namun memiliki potensi bahaya tinggi. Penelitian ini bertujuan untuk menganalisis potensi kecelakaan kerja dan merumuskan strategi pengendalian risiko pada proses produksi batik di Batik Mahkota Laweyan dengan pendekatan *Fault Tree Analysis* (FTA) dan HIRARC *(Hazard Identification, Risk Assessment, and Risk Control)*. Metode yang digunakan meliputi pengumpulan data kecelakaan kerja, observasi lapangan, wawancara, serta studi dokumen. Hasil analisis FTA menunjukkan bahwa akar penyebab kecelakaan meliputi ketidaktertiban penggunaan APD, tidak adanya SOP kerja tertulis, dan minimnya pelatihan K3. Identifikasi menggunakan HIRARC menunjukkan terdapat 14 potensi bahaya, dengan 29% berada pada tingkat risiko tinggi, 64% sedang, dan 7% rendah. Strategi pengendalian risiko dilakukan berdasarkan prinsip hierarki pengendalian melalui pendekatan teknik, administratif, dan penggunaan APD. Penelitian ini membuktikan bahwa pendekatan FTA dan HIRARC efektif dalam mengidentifikasi akar masalah dan memberikan rekomendasi pengendalian yang tepat dalam konteks industri batik.

Kata kunci*:* Keselamatan dan Kesehatan Kerja (K3), Industri Batik, FTA, HIRARC, Kecelakaan Kerja

ANALYSIS OF POTENTIAL WORK ACCIDENTS AND RISK CONTROL STRATEGIES IN THE BATIK INDUSTRY USING THE FTA AND HIRARC APPROACH

(CASE STUDY: MAHKOTA LAWEYAN BATIK UMKM)

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Abstract

Occupational safety and health (OHS) is a crucial aspect in industry, including the batik industry, which remains traditional but carries a high potential for hazards. This study aims to analyze the potential for workplace accidents and formulate risk control strategies in the batik production process at Batik Mahkota Laweyan using the Fault Tree Analysis (FTA) and HIRARC (Hazard Identification, Risk Assessment, and Risk Control) approaches. The methods used included workplace accident data collection, field observations, interviews, and document review. The FTA analysis revealed that the root causes of accidents included irregular use of PPE, the absence of written work SOPs, and minimal OHS training. Identification using HIRARC revealed 14 potential hazards, with 29% at high risk, 64% at medium risk, and 7% at low risk. The risk control strategy was implemented based on the hierarchy of control principle through engineering, administrative, and PPE use approaches. This study demonstrates the effectiveness of the FTA and HIRARC approaches in identifying root causes and providing appropriate control recommendations in the context of the batik industry.

Keywords: *Occupational Safety and Health (OHS), Batik Industry, FTA, HIRARC, Occupational Accidents*

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