ABSTRAK

Keselamatan dan Kesehatan Kerja (K3) merupakan aspek penting dalam kegiatan industri, khususnya pada industri semen yang memiliki tingkat risiko kecelakaan kerja tinggi. PT. X sebagai perusahaan manufaktur semen memiliki berbagai aktivitas kerja berbahaya, terutama di area silo Plant 14 yang berdasarkan data kecelakaan kerja periode 2022–2024 menunjukkan jumlah insiden tertinggi dibandingkan area lainnya. Penelitian ini bertujuan untuk mengidentifikasi potensi bahaya, menilai tingkat risiko, serta memberikan rekomendasi pengendalian risiko kecelakaan kerja pada pekerja di area silo Plant 14 PT. X menggunakan metode HIRARC (Hazard Identification, Risk Assessment, and Risk Control).

Metode penelitian yang digunakan adalah observasi lapangan, wawancara dengan pekerja, serta analisis data kecelakaan kerja selama tiga tahun terakhir. Identifikasi bahaya dilakukan pada setiap aktivitas kerja di area silo, kemudian dilakukan penilaian risiko dengan menentukan tingkat kemungkinan (likelihood) dan tingkat keparahan (severity) berdasarkan matriks risiko AS/NZS 4360:2004. Selanjutnya, pengendalian risiko dirumuskan menggunakan lima hirarki pengendalian risiko, yaitu eliminasi, substitusi, rekayasa teknik, pengendalian administratif, dan penggunaan alat pelindung diri (APD).

Hasil penelitian menunjukkan bahwa potensi bahaya utama di area silo meliputi paparan debu semen, risiko jatuh dari ketinggian, tertimpa atau terkena material, kebisingan, serta bahaya confined space. Penilaian risiko menunjukkan bahwa sebagian besar aktivitas kerja berada pada tingkat risiko sedang hingga tinggi, sehingga memerlukan perhatian dan tindakan pengendalian dari manajemen. Rekomendasi pengendalian risiko difokuskan pada peningkatan prosedur kerja, perbaikan sistem pengamanan, penerapan izin kerja khusus, peningkatan pelatihan K3, serta pengawasan penggunaan APD secara konsisten. Dengan penerapan

rekomendasi tersebut, diharapkan dapat menurunkan tingkat risiko kecelakaan kerja dan meningkatkan keselamatan kerja di area silo Plant 14 PT. X.

Kata kunci: Keselamatan dan Kesehatan Kerja, HIRARC, Risiko Kecelakaan Kerja, Area Silo, Industri Semen

ABSTRAC

Occupational Safety and Health (OHS) is a crucial aspect of industrial activities, particularly in the cement industry, which carries a high risk of workplace accidents. PT. X, a cement manufacturing company, engages in various hazardous work activities, particularly in the silo area of Plant 14, which, based on workplace accident data for the 2022–2024 period, has the highest number of incidents compared to other areas. This study aims to identify potential hazards, assess the level of risk, and provide recommendations for controlling workplace accident risks for workers in the silo area of PT. X's Plant 14 using the HIRARC (Hazard Identification, Risk Assessment, and Risk Control) method.

workplace accident data from the past three years. Hazard identification was performed for each work activity in the silo area, followed by a risk assessment by determining the likelihood and severity levels based on the AS/NZS 4360:2004 risk matrix. Furthermore, risk control was formulated using a five-step risk control hierarchy: elimination, substitution, engineering, administrative control, and the use of personal protective equipment (PPE).

The research results indicate that the main potential hazards in the silo area include exposure to cement dust, the risk of falling from a height, being struck or struck by material, noise, and confined space hazards. The risk assessment indicates that most work activities are at a moderate to high risk level, requiring management attention and control measures. Risk control recommendations focus on improving work procedures, enhancing safety systems, implementing special work permits, increasing occupational safety and health (K3) training, and consistently monitoring the use of PPE. Implementing these recommendations is expected to reduce the risk of workplace accidents and improve safety in the silo area of Plant 14 PT. X.

Keywords: Occupational Safety and Health, HIRARC, Occupational Accident Risk, Silo Area, Cement Industry