UNIVERSITAS
GADJAH MADA
**Evaluasi Ergonomi Lingkungan Kerja, Postur Tubuh, Proses Kerja, dan Penerapan 5S pada Bagian Revisi
(Rework) di PT Java Connection**
Ilman Nurrafi Raditiyo, Ir. Rini Dharmastiti, M.Sc., Ph.D., IPM., ASEAN Eng.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

INTISARI

Bagian *rework* pada proses produksi furnitur kayu berbahan baku kayu daur ulang di PT Java Connection memiliki karakteristik pekerjaan yang bervariasi dengan tuntutan ketelitian visual tinggi, sehingga pekerja sering mengadopsi postur tubuh yang tidak netral. Selain itu, area ini juga berpotensi memunculkan aktivitas kerja non produktif akibat penataan alat dan material yang belum tertata baik, kondisi lingkungan kerja yang belum terukur, serta penerapan prinsip 5S yang belum maksimal. Berbagai kondisi tersebut berpotensi menimbulkan risiko ergonomi dan menurunkan produktivitas kerja. Oleh karena itu, penelitian ini bertujuan untuk mengevaluasi kondisi ergonomi lingkungan kerja, proses kerja, postur tubuh, serta penerapan prinsip 5S, dan memberikan rekomendasi perbaikan kondisi kerja berdasarkan hasil evaluasi.

Penelitian ini dilakukan melalui pengamatan dan pengukuran langsung di area *rework*. Lingkungan kerja dinilai dengan mengukur iklim kerja panas menggunakan *heat stress monitor* dan tingkat pencahayaan menggunakan *lux meter*, proses kerja dianalisis menggunakan metode *work sampling*, postur kerja dinilai dengan metode REBA, dan area kerja dinilai berdasarkan prinsip 5S (*sort*, *set in order*, *shine*, *standardize*, dan *sustain*).

Hasil dari penelitian menunjukkan bahwa tingkat iklim kerja di area *rework* telah memenuhi Nilai Ambang Batas (NAB) iklim kerja panas, sedangkan rata-rata tingkat pencahayaan pada beberapa titik pengukuran masih berada di bawah standar 200 lux. Proses kerja *rework* didominasi proporsi aktivitas produktif dengan rata-rata 77,31%±6,43%, namun masih terdapat proporsi aktivitas non produktif sebesar 22,69%±6,43% terdiri atas *personal time*, *idle*, *searching*, dan *walking*. Penilaian postur kerja menunjukkan tiga pekerja memiliki skor 8, 9, dan 10 dengan kategori tingkat risiko tinggi dengan tindakan perubahan yang diperlukan segera, sedangkan dua pekerja memiliki skor 7 dengan kategori tingkat risiko sedang dengan tindakan perubahan yang tetap diperlukan. Penerapan prinsip 5S belum maksimal dengan skor aktual 70%, pilar *sort* menunjukkan penerapan paling baik, sedangkan pilar *standardize* merupakan pilar terlemah. Rekomendasi perbaikan mencakup penambahan lampu pada titik pengukuran yang belum memenuhi standar untuk meningkatkan kualitas pencahayaan, pengaturan waktu *personal time* dan *idle* menjadi *microbreak* yang terstruktur, penataan alat dan material serta tempat penyimpanan yang jelas untuk mengurangi aktivitas non produktif *searching* dan *walking*, penyesuaian fasilitas dan posisi benda kerja agar postur kerja pekerja *rework* lebih mendekati posisi netral, serta penguatan penerapan prinsip 5S dengan memperkuat pilar *set in order* melalui penetapan tempat penyimpanan alat dan material yang jelas serta pemberian label pada rak dan wadah penyimpanan, dan memperkuat pilar *standardize* melalui penyusunan panduan visual yang memuat prosedur kerja sederhana.

Kata Kunci: Ergonomi, Lingkungan Kerja, Proses Kerja, Postur Tubuh, 5S

UNIVERSITAS
GADJAH MADA
**Evaluasi Ergonomi Lingkungan Kerja, Postur Tubuh, Proses Kerja, dan Penerapan 5S pada Bagian Revisi
(Rework) di PT Java Connection**
Ilman Nurrafi Raditiyo, Ir. Rini Dharmastiti, M.Sc., Ph.D., IPM., ASEAN Eng.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

ABSTRACT

The rework section in the production process of wooden furniture made from recycled wood at PT Java Connection has various job characteristics with high visual accuracy demands, causing workers to frequently adopt non neutral body postures.In addition, this area also has the potential to generate non productive work activities due to poorly organized tools and material, unmeasured working environment conditions, and suboptimal implementation of the 5S principles. These conditions may lead to ergonomic risks and reduced work productivity. Therefore, this study aims to evaluate the ergonomic conditions of the working environment, work processes, body postures, and the implementation of 5S, as well as to provide recommendations for improvements to working conditions based on the evaluation results.

The study was conducted through direct observation and measurement in the rework area. The working environment was assessed by measuring heat stress using a heat stress monitor and lighting levels using a lux meter, the work process was analyzed using the work sampling method, working postures were evaluated using the REBA method, and the work area was assessed based on the 5S principles (sort, set in order, shine, standardize, and sustain).

The results showed that the heat stress level in the rework area met the threshold limit value (TLV) for heat stress, while the average lighting level at several measurement points was still below the 200 lux standard. The rework process was dominated by productive activities with an average of 77,31%±6,43%, but there was still a proportion of non productive activities of 22,69%±6,43%, consisting of personal time, idle, searching, and walking. The posture assessment showed that three workers had REBA scores of 8,9, and 10, indicating a high risk level requiring immediate corrective actions, while two workers had a score of 7, indicating a medium risk level where corrective actions were still needed. The implementation of 5S was not optimal, with an actual score of 70%, where the sort pillar showed the best implementation, while standardize pillar was the weakest. Recommended improvements include adding lamps at measurement points that do not meet the lighting standard to improve lighting quality, adjusting personal time and idle time into structured microbreaks, arranging tools and materials as well as clear storage locations to reduce non productive activities such as searching and walking, adjusting facilities and the position of workpieces so that workers postures are closer to neutral, and strengthening the implementation of 5S principles by reinforcing the set in order pillar through the establishment of designated storage locations for tools and materials as well as labeling racks and storage containers, and reinforcing the standardize pillar through the preparation of visual guidelines containing simple work procedures.

Keywords: Ergonomics, Work Environment, Work Process, Body Posture, 5S