

ABSTRAK

Perbaikan tata letak merupakan kegiatan yang penting dilakukan bagi perusahaan karena adanya penambahan jenis produk yang akan diproduksi, penambahan departemen, dan penambahan lantai produksi. Biro workshop PT Semen Padang saat ini akan melakukan penambahan departemen berupa satu unit mesin roll yang akan memproduksi jenis produk baru dan perlu penambahan luas lantai produksi $\pm 856,8 \text{ m}^2$. Perbaikan tata letak lantai produksi workshop dilakukan dengan melakukan perancangan ulang lantai produksi. Perancangan tata letak berdasarkan tipe tata letak proses karena di workshop berproduksi berdasarkan make to order sehingga variasi produk banyak dan jumlah produk yang dihasilkan sedikit.

Perancangan dilakukan dengan mengikuti prosedur Systematic Layout Planning. Metode yang digunakan dalam perancangan ini adalah metode kuantitatif untuk menentukan keterkaitan proses pemesinan tiap komponen. Metode kuantitatif yang digunakan dengan melakukan perhitungan ongkos material handling. Melakukan perhitungan koefisien outflow dan koefisien inflow pada metrik from to chart sehingga didapatkan hasil keterkaitan mesin pada tabel skala prioritas. Susunan mesin di tampilan dalam bentuk Activity Relationship Diagram. Perhitungan jarak dan ongkos material handling menggunakan software Flowplanner. Pemilihan alternatif rancangan berdasarkan jarak dan ongkos material handling terkecil.

Perancangan tata letak berdasarkan prosedur Systematic Layout Planning dengan metode kuantitatif diperoleh empat rancangan alternatif berdasarkan nilai koefisien outflow dan koefisien inflow. Empat alternatif yang telah dirancang terpilih satu rancangan terbaik berdasarkan jarak dan ongkos material handling terkecil yaitu pada alternatif 1 koefisien inflow. Jarak tempuh material handling diperoleh sebesar 19.591,65 meter dan total ongkos material handling sebesar Rp492.851,28.

Kata Kunci : Workshop, Systematic Layout Planning, From to Chart, Ongkos Material Handling.

ABSTRACT

Improvement of layout is a crucial activity done by company because of new product type that will be produced, addition of department, and production layout. Workshop department of PT Semen Padang will have an additional department, a roll machine unit, that will produce new type of product, and it needs layout production about $\pm 856,8 \text{ m}^2$. The improvement of workshop production floor layout is conducted by redesigning the production layout. Layout designing is based on the type of layout process due to make to order based production, producing various types of products but in small scale for each type.

Designing is conducted by following systematic layout planning procedure. Quantitative method is used in this design to find out the relationship of each component machining process. Quantitative method used by counting material handling cost. Outflow and inflow coefficient counting is used in matrix from to chart so that the relationship of machine in priority scale table is figured out. Machinery layout is displayed in Activity Relationship Diagram. Calculation of distance and material handling cost used flowpleener software. Selection alternative design is based on distance and minimum material handling cost.

Designing layout based on Systematic Layout Planning procedure by using quantitative method results in four alternative designs that are based on outflow and inflow coefficient values. Among the four alternative designs, it is selected the best design based on distance and minimum material handling cost, that is alternative 1 of inflow coefficient. Material handling distance gained is 19.591,65 meters and total cost of material handling is Rp 492.851,28.

Keywords : Workshop, Systematic Layout Planning, From to Chart, Material Handling Cost.