

## INTISARI

### ANALISIS PRODUKTIVITAS *BATCHING PLANT* PADA PRODUKSI BETON (STUDI KASUS : *BATCHING PLANT* PT ADHI PERSADHA BETON SEYEGAN PROYEK TOL JOGJA-BAWEN )

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Pada berbagai pekerjaan struktur dalam suatu proyek terdapat pula pekerjaan pembetonan atau pengecoran suatu konstruksi. Pada proyek Jalan Tol Jogja-Bawen ini pekerjaan pembetonan adalah pekerjaan yang memiliki volume paling besar diantara sub pekerjaan lainnya. Akan tetapi walaupun memiliki volume paling besar terkadang terdapat beberapa kendala seperti permintaan lapangan yang tak pasti dan kerusakan alat yang menghambat proses produksi. Penelitian ini bertujuan untuk menganalisis prosedur pelaksanaan produksi beton, Menganalisis kapasitas produksi beton harian di *Batching Plant*, Menganalisis faktor-faktor yang mempengaruhi proses produksi beton pada *Batching Plant*, dan Menganalisis evektivitas dan produktivitas alat berat yang digunakan pada *Batching Plant*

Penelitian ini menggunakan metode kuantitatif dengan pendekatan *Man and Machine Process Chart* dan *Overall Equipment Effectiveness (OEE)*. Data yang digunakan diperoleh dari hasil pengamatan langsung ketika di lokasi pengamatan selama pelaksanaan magang. Pengamatan dalam kasus ini berfokus pada Cycle Time dari alat berat yang ada (*wheel loader, batching plant, truck mixer*) dengan menghitung cakupan waktu dari suatu kegiatan yang dilakukan alat berat dan data waktu kerja tidak evektivitas mesin *batching plan* saat produksi berlangsung.

Hasil penelitian ini menunjukkan Kapasitas produksi harian aktual *Batching Plant* Seyegan periode bulan Maret 2023 sebesar 328 m<sup>3</sup> atau 48% dari kapasitas produksi optimal sebesar 684 m<sup>3</sup> /hari, Produktivitas *wheel loader* dalam memuat agregat halus 75,23 m<sup>3</sup>/jam, dan agregat kasar sebesar 80,68m<sup>3</sup>/jam, Cycle Time Rata-Rata *Truck Mixer* adalah selama 70 menit atau 1,2 jam. Nilai OEE Mesin *Batching Plant* tidak ideal yaitu 80,90%. Selisih antara OEE Mesin *Batching Plant* dengan OEE world class adalah 3,10 %, *performance efficiency* memberikan kontribusi paling besar pada rendahnya nilai OEE yaitu 85,10%. *performance efficiency* yang rendah menunjukkan banyaknya jeda ataupun waktu yang terbuang sia-sia ketika produksi berjalan. Sedangkan faktor faktor yang mempengaruhi produksi beton pada *batching plant* seyegan adalah jumlah permintaan beton dari lapangan, jadwal produksi, jadwal material, kondisi mesin, lingkungan, sumber daya manusia, kualitas bahan baku, kondisi cuaca, ketersediaan *Truck Mixer*, dan *Traffic Management*

Kata kunci : *Batching Plant*, Produktivitas, Evektivitas, *Man and Machine Process Chart*, *Overall Equipment Effectiveness*, Produktivitas

## **ABSTRAC**

### **PRODUCTIVITY ANALYSIS OF BATCHING PLANT IN CONCRETE PRODUCTION (CASE STUDY: BATCHING PLANT PT ADHI PERSADHA BETON SEYEGAN JOGJA-BAWEN TOLL PROJECT)**

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*In various structural works in a project there are also concrete or casting works in a construction. In the Jogja-Bawen Toll Road project, the concrete work is the work that has the largest volume among the other sub-works. However, even though it has the largest volume, sometimes there are several obstacles such as uncertain field demands and equipment damage that hinders the production process. The purpose of this study is to analyze the procedures for carrying out concrete production, analyze the daily concrete production capacity in the batching plant, analyze the factors that influence the concrete production process in the batching plant, and analyze the effectiveness and productivity of the heavy equipment used in the batching plant.*

*This research uses quantitative methods with the approach of Man and Machine Process Chart and Overall Equipment Effectiveness (OEE). The data used was obtained from direct observation at the observation site during the internship. Observations in this case focused on the Cycle Time of existing heavy equipment (wheel loaders, batching plants, truck mixers) by calculating the time coverage of an activity carried out by heavy equipment and data on the ineffective working time of the batching plan machine during production.*

*The results of this study show that the actual daily production capacity of the Seyegan Batching Plant for the period March 2023 is 328 m<sup>3</sup> or 48% of the optimal production capacity of 684 m<sup>3</sup>/day, the productivity of the wheel loader in loading fine aggregate is 75.23 m<sup>3</sup>/hour, and the coarse aggregate is 80,68m<sup>3</sup>/hour, the Average Cycle Time of the Mixer Truck is 70 minutes or 1.2 hours. The OEE value of the Batching Plant Machine is not ideal, namely 80.90%. The difference between OEE Batching Plant Machinery and OEE world class is 3.10%, performance efficiency contributes the most to the low OEE value of 85.10%. Low performance efficiency indicates a lot of lag or wasted time when production is running. Meanwhile, the factors that affect concrete production in batching plants are the number of requests for concrete from the field, production schedules, material schedules, machine conditions, environment, human resources, quality of raw materials, weather conditions, availability of Mixer Trucks, and Traffic Management.*

*Keywords : Batching Plant, Produktivitiy, Evektivitiy, Man and Machine Process Chart, Overall Equipment Effectiveness, Production*