

ABSTRAK

Alat pengangkut di dunia industri berperan penting dalam membantu proses produksi, salah satunya adalah *conveyor*. *Belt conveyor* merupakan peralatan mekanis yang disesuaikan dengan kebutuhannya guna memperoleh efektivitas dan efisiensi kerja. Apabila gaya tarik pada *belt* tidak sesuai, *conveyor* tidak dapat bekerja dengan optimal dan dapat mengakibatkan kerusakan pada komponen *conveyor*. Berdasarkan hasil penelitian di lapangan, ditemukan permasalahan pada *sliding belt conveyor*. Gaya tarik *belt* pada *moving section area of sliding belt conveyor* tidak mencapai gaya tarik minimal, sehingga mengakibatkan keterlambatan *reposting time*. Dengan demikian analisa ini ditujukan untuk mengetahui gaya tarik *belt* dan *reposting time*.

Analisa dilakukan dengan perhitungan yang mengacu pada *Conveyor Belt Design Manual* dan *Conveyors and Related Equipment* dengan mengetahui spesifikasi *conveyor* dan jenis material angkut. Pembebanan pada *conveyor* ditentukan berdasarkan dimensi dan massa jenis material angkut terbesar. Data yang diperoleh selanjutnya diolah untuk mengetahui efektivitas dan efisiensi kerja *sliding belt conveyor*.

Berdasarkan hasil analisa, dapat disimpulkan dimensi dan massa jenis material angkut terbesar memiliki berat 5,131 kg dengan nilai gaya tarik minimal sebesar 44,219 kg, gaya tarik maksimal sebesar 397,642 kg, dan gaya tarik efektif sebesar 242,25 kg. Sedangkan *reposting time* diperoleh waktu 8 detik.

Kata kunci : gaya tarik *belt*, *conveyor*, *belt*, *sliding belt conveyor*

ABSTRACT

Transportation equipment in the industrial world plays an important role in the production process, one of which is conveyor. Belt conveyor have mechanical equipment that is customized to their needs in order to obtain work effectiveness and efficiency. If the belt tension is not appropriate, the conveyor can not work optimally and can result in damage to the conveyor components. Based on the result of research in the field, problem were found in the sliding belt conveyor. The belt tension in the moving section area of the sliding belt conveyor does not reach the minimum tension, resulting in a delay in reposting time. So it is necessary to analysis the belt tension and reposting time.

The analysis is carried out by calculations referring to the Conveyor Belt Design Manual and Conveyor and Related Equipment by knowing the specifications of the conveyor and type of conveying material. The load on the conveyor is determined based on the dimensions and the largest density of conveying material. The data obtained is then processed to determine the effectiveness and efficiency of sliding belt conveyor.

Based on the results of analysis, it can be concluded that the dimensions and density of the largest conveyance material have a weight 5,131 kg with minimum tension is 44,219 kg, the maximum tension is 397,642 kg, and the effective tension is 242,25 kg. Meanwhile, the reposting time is 8 seconds.

Keyword : belt tension, conveyor, belt, sliding belt conveyor