ABSTRAK

Pada *section material* di perusahaan ban terdapat mesin *extruder* yang menghasilkan salah satu bagian penyusun ban yaitu *sidewall*. *Sidewall* merupakan bagian dinding samping ban yang terus-menerus melentur dan pelindung *casing* bagian samping. Pada *section material* terdapat cacat produk yaitu *foreign material* pada mesin *extruder* dalam pembuatan produk *sidewall*. *Sidewall* menjadi *defect* tertinggi dengan jumlah 198 pcs ban selama periode 3 bulan dari Juni sampai Agustus 2023 atau rata-rata 66 pcs/bulan melebihi *defect* yang telah ditentukan yaitu 30 pcs/bulan. Penelitian ini bertujuan untuk membuat *feeding conveyor* (*belt conveyor*) dengan dilengkapi alat deteksi metal sehingga memudahkan operator dalam menyeleksi *defect foreign material* pada *sidewall*. Metode yang digunakan dalam penelitian ini yaitu metode perancangan VDI 2222. Hasil perancangan desain konstruksi *conveyor* aman digunakan berdasarkan simulasi pembebanan dan perhitungan kekuatan material yang telah dilakukan. Pengujian pada *conveyor feeding upper extruder* dinyatakan berhasil karena mampu berfungsi dengan baik dan dapat menurunkan *defect foreign material* menjadi total 75 pcs pada bulan Oktober, November dan Desember atau rata-rata 25 pcs perbulan.

Kata kunci: *Extruder, defect, Sidewall, Foreign Material, Belt Conveyor*

DESIGN AND CONVEYOR CONVEYOR FEEDING UPPER EXTRUDER FOR A TIRE COMPANY

ABSTRACT

In the material section at the tire company there is an extruder machine which produces one of the parts that make up the tire, namely the sidewall. The sidewall is the part of the tire sidewall that continuously flexes and protects the side casing. In the material section there is a product defect, namely foreign material on the extruder machine in making sidewall products. Sidewall was the highest defect with a total of 198 tires during the 3 month period from June to August 2023 or an average of 66 pcs/month exceeding the specified defect of 30 pcs/month. This research aims to make a feeding conveyor (belt conveyor) equipped with metal detection equipment to make it easier for operators to select foreign material defects on the sidewall. The method used in this research is the VDI 2222 design method. The results of the conveyor construction design are safe to use based on load simulations and material strength calculations that have been carried out. Testing on the upper extruder feeding conveyor was declared successful because it was able to function well and was able to reduce foreign material defects to a total of 75 pcs in October, November and December or an average of 25 pcs per month.

Keywords: *Extruder, Defect, Sidewall, Foreign Material, Conveyor*