

## RINGKASAN

Area *conveyor drift* tambang bawah tanah DMLZ sangatlah penting dan kritis untuk kegiatan transportasi bijih, sehingga diperlukan pemantauan dan perawatan drift. Ground support adalah salah satu aspek yang tidak bisa dipisahkan dalam sebuah perencanaan penambangan dengan metode tambang bawah tanah, kesuksesan dan kegagalan dalam menentukan ground support menjadi hal yang sangat penting. Kegagalan dalam hal ini dapat menyebabkan resiko terhadap keselamatan bagi para pekerja serta terganggunya aktivitas produksi.

Pendekatan desain *ground support* berdasarkan potensi deformasi ketika terjadi *displacement* akibat adanya tekanan perlu dilakukan karena saat *ground support* mengalami deformasi, masing-masing kapasitas *ground support* berkurang secara bertahap menjadi nol. Pemulihan kapasitas *ground support* yang berkurang di area tersebut dapat dikembangkan dengan implementasi *Preventive Support Maintenance* (PSM), dimana pemasangan tambahan *ground support* dilakukan sebelum area tersebut membutuhkan rehabilitasi.

Penelitian dilakukan dengan pengambilan data *displacement* yang terjadi di tiap stasiun sepanjang area *drift conveyor* DMLZ menggunakan alat ukur konvergen. Nilai *cumulative displacement* yang terdapat pada area *drift conveyor* berkisar 1,85 mm hingga 5,41 mm, sedangkan untuk *incremental velocity* berkisar 0,01 mm/hari hingga 0,18 mm/hari. *Preventive Support Maintenance* (PSM) dapat dibuat berdasarkan nilai potensi *displacement* dan kapasitas *ground support* yang sebelumnya telah terpasang di area tersebut.

Hasil penelitian menunjukkan bahwa data pengukuran *displacement* dari bulan Mei 2022 sampai dengan April 2023 tidak terjadi *displacement* yang signifikan. Pengaruh *displacement* yang terjadi sepanjang area *drift conveyor* DMLZ sampai saat ini belum menimbulkan kerusakan yang tampak secara visual, namun kegiatan pemantauan tetap perlu dilakukan secara berkala. Klasifikasi PSM telah dibuat berdasarkan *potensi displacement* yang akan terjadi, dimana tambahan *ground support* sebagai *action plan* PSM yaitu pemasangan MDX bolt sepanjang 3 m dengan spasi 1,1 m.

## **SUMMARY**

*The DMLZ underground mine drift conveyor area is very important and critical for ore transportation activities, so drift monitoring and maintenance are required. Ground support is one aspect that cannot be separated in mine plan using underground mining methods, success and failure in determining ground support is very important. Failure in ground support could result in safety risks for workers and disruption of production activities.*

*A ground support design approach based on the potential for deformation, when displacement occurred due to pressure, is necessary because when the ground support is deformed, each ground support capacity decreases gradually to zero. Recovery of reduced ground support capacity can be developed by implementing Preventive Support Maintenance (PSM), in which additional ground support is installed before the area requires rehabilitation.*

*The research was carried out by taking displacement data that occurred at each station along the DMLZ drift conveyor area using convergent measurement tools. The cumulative displacement value in the drift conveyor area ranges from 1.85 mm to 5.41 mm, while incremental velocity ranges from 0.01 mm/day to 0.18 mm/day. Preventive Support Maintenance (PSM) can be made based on the potential displacement value and ground support capacity that was previously installed.*

*The results of the study showed that the displacement measurement data from May 2022 to April 2023 had not showed any significant displacement. The effect of displacement that occurred along the DMLZ drift conveyor area had so far not caused any visible damage, but monitoring activities need to be carried out periodically. The PSM classification had been made based on the potential displacement that will occur, where additional ground support is included in the PSM action plan, namely the installation of 3 m long MDX bolts with 1.1 m spacing.*