Tinjauan Kekuatan Sistem Penyangga Terowongan dengan Menggunakan Metode Elemen Hingga

Title	Tinjauan Kekuatan Sistem Penyangga Terowongan dengan Menggunakan Metode Elemen Hingga
Author Order	of
Accreditation	
Abstract	In the developing countries like Indonesia, especially in the big cities like Jakarta, tunnel constructions should be considered to solve traffic problems. Besides, geological and topographical condition in Indonesia that is rich of mine materials making tunnel construction will be developed in the future. But then, to the present time, there are too many cases of failure of tunnel construction inÃƒÂ,Ã,Â several countries. This failure caused by supporting system of tunnel doesnÃƒÂ¢Ã,Â€Ã,Â™t capable to support the construction. Based on this ÃƒÂ,Ã,Â phenomenon, it was necessary to research about review of supporting system strength of tunnel construction.Stability analysis of mine tunnel that belongs to P.T. Aneka Tambang Tbk, located in Pongkor Mountain, Bogor, West Java, would be done in this research. This analysis was conducted with numerical method using plaxis 3D tunnel software. Slice of tunnelÃƒÂ,Ã,Â along 15 meters of length will be analyzed in this research. This slice would be divided into three step of excavation. Mohr Coloumb material model were used in soil material. Whereas linear elastic model were used in other materials likes shotcrete, rock bolt and steel sets. Three variation conditions of tunnels would be considered in this research namely tunnel without supporting system, tunnel with original supporting system (same as in the research location), and tunnel with Q system supporting system. In this research, examination would be done for the change of displacement of the tunnel construction in consequence of the three conditions above.The results of this research show that the installation of supporting system reduced displacement of the tunnel significantly.ÃƒÂ,Ã,Â Average decreasing of displacement value as a result of the original supporting system is 12.5 cm (46.30 %). Whereas, average decreasingÃƒÂ,Ã,Â of displacement as a result of the Q system supporting system is 9.25 cm (34.26%). Although not as strength as original supporting system,ÃƒÂ,Ã,Â the Q system supporting system deserves to be considered in supporting system analysis.
Publisher Name	Jenderal Soedirman University
Publish Date	2010-02-28
Publish Year	2010
Doi	DOI: 10.20884/1.dr.2010.6.1.32
Citation	
Source	Dinamika Rekayasa
Source Issue	Vol 6, No 1 (2010): Dinamika Rekayasa - Februari 2010
Source Page	33-38
Url	http://dinarek.unsoed.ac.id/jurnal/index.php/dinarek/article/view/32
Author	Dr.Eng ARWAN APRIYONO, S.T, M.Eng