

CH<sub>L</sub>

CH

CH,Cl, ML, SM

CH<sub>H</sub>

CBR

CBR

CH<sub>H</sub>, CH<sub>L</sub>, CL, ML

SM

(E-mail: bmajnoni@ut.ac.ir)

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**Philip Sherwood**

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Cl , CH "

CBR  
 CH<sub>L</sub>, ML  
 CH<sub>H</sub> CL

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 CH  
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ML	/	/	/	/	/	
CH <sub>H</sub>	/				/	
CH <sub>L</sub>	/	/	/		/	
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CH <sub>L</sub>	/	/	/	/	/	
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CH <sub>H</sub>	/	/	/	/	/	
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CH <sub>L</sub>	/	/	/	/	/	
CH <sub>L</sub>	/	/	/	/	/	
CL	/	/	/	/	/	
CH <sub>L</sub>	/	/	/		/	
ML	/	/	/	/	/	
CH <sub>L</sub>	/	/	/	/	/	
ML	/	/	/		/	
CH	/	/	/	/	/	
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CH <sub>L</sub>	/	/	/	/	/	

USCS	LI	PL	PL%	LL %	W %	
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SM					/	
ML	/	/	/		/	
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CL	/	/	/	/	/	
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CH <sub>L</sub>	/	/	/		/	
CL	/	/	/	/	/	
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CH	/		/	/	/	
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ML	/	/	/	/	/	
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ML	/	/	/		/	
ML	/	/	/	/	/	
ML	/	/	/	/	/	
ML	/	/	/	/	/	
CH <sub>L</sub>	/	/	/	/	/	
CH <sub>L</sub>	/	/	/		/	
ML	/	/	/	/	/	
ML	/	/	/	/	/	
ML	/	/	/		/	



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**CBR**

		ML	CL	CH <sub>L</sub>	CH <sub>H</sub>
		/	/	/	/
		/	/	/	/
	%		/	/	/
	%	/	/	/	/
	%	/	/	/	/
	%	/	/	/	/
	%	/	/	/	/
	%	/	/	/	/
	%	/	/	/	/

(kg/cm<sup>2</sup>)

\	ML	CL	CH <sub>L</sub>	CH <sub>H</sub>
	/	/	/	/
%		/	/	/
%	/	/	/	/
%	/	/	/	/
%	/	/	/	/

	/	/		ML
	/	/		CL
				CH <sub>L</sub>
				CH <sub>H</sub>

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## Determination of Optimum Lime Percent Content for Forest Road Soils Stabilization and Treatment in Namkhaneh District of Kheiroodkenar Research Forest

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B. Sadeghi<sup>2</sup>

### Abstract

There are two phases involved in any road construction project, namely design and construction operations. In the construction phase, type of materials and their respective strength play an important role in the construction cost as well as in forest road longevity. Some soils, because of unsuitable technical characteristics, create difficulties in the process of road building. In such cases, reclamation and stabilization of soil must initially be taken into consideration. In order to find out the proper procedure as well as kind and quantity of stabilizers it is needed to carry out studies and make comparisons among options. This is needed to make one able to choose the least cost method in attaining the objective. Soils of Namkhaneh district in Kheiroodkenar forest were investigated in this study. A total of 61 samples were taken; soils with little susceptibility every 500 meters while soils with high susceptibility every 250 meters. In a geotechnic lab, the samples were studied and classified according to Granulometry Experiment, which consists of sieving (coarse materials) and hydrometry (fine materials). Through Atterberg limits experiments, liquid limits and plasticity limits were determined. According to these experiments, soils were classified as SM, ML, CL, CH.

In CH soil two subgroups of CH<sub>L</sub> and CH<sub>H</sub> (low and high liquid limit) were recognized. After classification, density and optimal humidity in each class of soil was determined. The resistance in each soil class was obtained through CBR and plate Bearing tests. Soils were mixed with 3, 5, 7 and 10 percent lime and then percent of optimal humidity was recalculated.

This treatment was carried on for 48 hours under standard conditions (50° c). It was concluded that ML, CL, CH and CH soils reach their maximum resistance while mixed with 3, 5, 7 and 10 percent lime respectively. Because of their high strength, MS soils were not tested in this study.

**Keywords:** Soil stabilization, Forest road, Road construction, Lime stabilization, Wood transportation.

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