



## 论文摘要

中南大学学报(自然科学版)

ZHONGNAN DAXUE XUEBAO(ZIRAN KEXUE BAN)

Vol.41 No.3 Jun.2010

[PDF全文下载] [全文在线阅读]

文章编号: 1672-7207(2010)03-1158-07

### 桩承式加筋垫层路堤地基承载力计算方法

曾革<sup>1, 2</sup>, 周志刚<sup>1</sup>

- (1. 长沙理工大学 交通运输工程学院, 湖南 长沙, 410076;
2. 湖南城市学院 土木工程学院, 湖南 益阳, 413000)

**摘要:** 在分析桩承式加筋垫层路堤的力学作用机理与地基承载力影响因素的基础上, 将地基承载力视为下承桩体复合地基承载力与加筋垫层及边坡土体压力作用所增加的承载力之和, 采用叠加法建立1种综合考虑基础刚度、置换率、垫层扩散作用、加筋拉力作用、边坡土体压力作用的地基承载力计算公式与验算方法。研究表明: 桩承式加筋垫层路堤地基承载力随基础刚度的减小、置换率的提高、加筋层数的增加、垫层扩散作用的加强而提高, 筋材拉力对提高地基承载力起主要作用。

**关键字:** 桩承式加筋垫层路堤; 地基承载力; 叠加法; 基础刚度; 置换率

### Calculation method for ground bearing capacity of pile-supported reinforced cushion embankment

ZENG Ge<sup>1, 2</sup>, ZHOU Zhi-gang<sup>2</sup>

- (1. College of Traffic and Transportation, Changsha University of Science and Technology, Changsha 410076, China;
2. College of Civil Engineering, Hunan City University, Yiyang 413000, China)

**Abstract:** Based on the mechanic action mechanism and influence element of ground bearing capacity on pile-supported reinforced cushion embankment, considering synthetically foundation stiffness, rate of replacement, spreading action of cushion stress, pulling force of geogrid, earth suppress action of side slope, the calculation formula and inspection method were presented considering ground bearing capacity as pile compound foundation capacity under embankment and bearing capacity which is increased by reinforced cushion and earth suppress action of side slope on ground bearing capacity. The results show that ground bearing capacity increases with the decrease of foundation stiffness, the increase of rate of replacement, geogrid layer number and spreading action of cushion stress. Pulling force of geogrid is a chief element for increasing ground bearing capacity.

**Key words:** pile-supported reinforced cushion embankment; ground bearing capacity; superimposing method; foundation stiffness; rate of replacement

# 有色金属在线

# 中国有色金属权威知识平台

版权所有：《中南大学学报(自然科学版、英文版)》编辑部

地 址：湖南省长沙市中南大学 邮编： 410083

电 话： 0731-88879765 传真： 0731-88877727

电子邮箱： [zngdx@mail.csu.edu.cn](mailto:zngdx@mail.csu.edu.cn) 湘ICP备09001153号