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### 新公路膨胀土判别与分类方法对皖中膨胀土的适用性研究

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收稿日期 2005-9-20 修回日期 2005-11-11 网络版发布日期 2006-12-15 接受日期

**摘要** 《公路路基设计规范》(JTG D30 - 2004)建议的膨胀土判别与分类的新指标未经广泛验证, 其适用性有待探讨, 其分级标准更需广泛的试验验证。依托皖中地区在建的合肥—六安—叶集高速公路, 开展该判别与分类方法的试验验证研究。开展了系统的膨胀土特性试验, 对各项判别指标之间的相关性和判别结果的一致性进行研究, 探讨新规范推荐标准在皖中地区膨胀土判别与分类中的适用性以及合理的分级评判标准。研究表明, 标准吸湿含水率具有较好的分类特性, 但按规范推荐标准给出的膨胀等级明显偏高; 皖中膨胀土以弱偏中等膨胀土为主, 自由膨胀率偏小。综合以上分析, 建议皖中地区膨胀土膨胀潜势分级的界限值, 按建议的分级标准, 其分类结果能达到较好的一致。最后, 引入小于0.002 mm胶粒含量、蒙脱石含量指标进行综合判别, 验证建议分类标准对于皖中地区膨胀土的适用性较好, 具有一定的推广价值。

**关键词** [土力学](#) [膨胀土分类](#) [标准吸湿含水率](#) [塑性指数](#) [自由膨胀率](#)

分类号

## APPLICABILITY OF RECOMMENDED CLASSIFICATION IN SPECIFICATION METHOD FOR EXPANSIVE SOILS IN THE MIDDLE AREA OF ANHUI PROVINCE

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### Abstract

The distinguishing index and grading standards of expansive soil are recommended by Specifications for Design of Highway Subgrades(JTG D30-2004). Its feasibility for expansive soils in the middle area of Anhui Province is discussed, and the correlation of three distinguishing indexes and consistence of classification grade are analyzed. The analytical results indicate that the standard absorption moisture possesses the better sort feature, but the classification grade is obviously higher according to the above specification, and the free swelling ratio of expansive soil in the middle area of Anhui Province is lower. On the foundation of above research, the grading standards for the expansive soil in the middle area of Anhui Province is suggested, and the classification result can achieve better unanimity according to the suggested standards. Finally, verification analysis is carried out by consulting the content of colloidal particle less than 0.002 mm and the content of montmorillonite. The analytical results illustrate that the suggested standards possess the better applicability for expansive soil in the middle area of Anhui Province.

**Key words** [soil mechanics](#) [classification of expansive soil](#) [standard absorption moisture](#) [plasticity index](#) [free swelling ratio](#)

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