山东大学学报(工学版) 2012, 42(6) 86-92 DOI: ISSN: 0412-1961 CN: 21-1139



土木工程

# 地下储油库岩体水文地质分类及工程应用研究

梁建毅1,李术才2,薛翊国2,王者超2,周毅2,平洋2

1. 黄岛国家石油储备基地有限责任公司, 山东 青岛 266426; 2. 山东大学岩土与结构工程研究中心, 山东 济南 250061

摘要:

目前现行的岩体分类标准是以评价围岩稳定性为目的的,不能满足工程对围岩渗透性的要求。以现行岩体分类标准和水封洞库工程特殊性为基础,考虑岩体质量和岩体导水性,并将结构面的连通率、张开度、产状等因素引入评价标准,采用施工勘察、超前地质预报等技术手段,建立了一种服务于水封洞库施工的水文地质分类方法。水文地质分类指导洞库围岩的注浆工作,采用地质雷达和压水试验对注浆效果进行检验,确保了洞库围岩稳定性和水封性。

关键词: 水文地质 地下水封石油洞库 地下水 岩体分类 注浆

## Rock mass classification for undergound facility with emphasis on hydrogeology and its engineering application

LIANG Jian-yi1, LI Shu-cai2, XUE Yi-guo2, WANG Zhe-chao2, ZHOU Yi2, PING Yang2

1. Huangdao Oil Reserve Base Limited Company, Qingdao 266426, China; 2. Geotechnical and Structural Engineering Research Center, Jinan 250061, China

Abstract:

The current classification standards of rock mass, based on evaluation for the stability of surrounding rock mass, can not meet special requirements of underground projects on permeability of surrounding rock mass. Based on the analysis of the current rock mass classification standards and the particularity of underground crude oil storage caverns, the evaluation of rock permeability and the quality of rock mass were considered at the same time. The hydrological geology classification method for the service of the construction was established in order to objectively analyze the permeability of surrounding rock based on the technical means of the detailed investigation, construction survey and advanced geological prediction, of which the connecting rate of the structure, the opening degree and preferred structural plane’s attitude were introduced into the evaluation criteria. The hydrological classification direct guide grouting, and the effect of grouting was inspected by using the geological radar and packer test to ensure the stability and water seal of underground cavity.

Keywords: hydrogeology large underground crude oil storage caverns;groundwater rock classification grouting

收稿日期 2012-04-23 修回日期 网络版发布日期

DOI:

基金项目:

中国博士后科学基金特批资助项目(2012T50615);山东省博士后创新项目(201103034)

通讯作者:

作者简介: 梁建毅(1970- ),男,河北张家口人,工程师,主要研究方向为石油储油技术及工程管理. E-mail: gchdljy@163.com

作者Email:

PDF Preview

参考文献:

本刊中的类似文章

1. 薛翊国，李术才，赵岩，苏茂鑫，李为腾，丁志海.青岛胶州湾海底隧道F44含水断层注浆前后TSP探测分析[J].

山东大学学报(工学版), 2009,39(2): 108-112
2．廖伙木,董增川, 束龙仓,贠汝安 .地下水位预报中的组合时间序列分析法[J]. 山东大学学报(工学版), 2008,38(2): 96-100
3．赵继增.青岛胶州湾海底隧道涌水断层全断面帷幕注浆技术研究[J]. 山东大学学报(工学版), 2009,39(6): 116-120
4．姚占勇,李运恒,商庆森,李世华,张宏博 .平原水网区等级公路若干问题的研究[J]. 山东大学学报(工学版), 2008,38(1): 70-73
5．刘人太 李术才 潘光明 张庆松 武文东 李海燕 林明远.深井巷道涌水探查方法及工程治理研究[J]. 山东大学学报(工学版), 2009,39(4): 125-129

---