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锚杆耐久性现场试验研究

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摘要 论述在17 a前埋设于河南焦作市焦东煤矿现场的一批旨在研究应力腐蚀和化学腐蚀耦合效应的缩尺试验锚杆的腐蚀环境和腐蚀状况, 对开挖出的缩尺试验锚杆的点蚀、坑蚀、失重、腐蚀速率和强度损失率等进行较全面的测试和分析, 指出在中等腐蚀环境下, 裸露缩尺锚杆(钢筒体)的强度损失率约为14.0%, 直径损失约为10.0%, 截面积损失约为19.0%; 其失重率极不均匀, 最高者约为最低者的24.4倍; 一根缩尺锚杆钢筋经过17 a, 其抗拉极限荷载, 比使用年限为0的相同锚杆的低18.4%~22.2%。

关键词 [采矿工程](#) [锚杆](#) [耐久性](#) [使用寿命](#) [现场试验](#)

分类号

IN-SITU EXPERIMENTAL STUDY ON ANCHOR DURABILITY

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Abstract

To study stress corrosion and chemical corrosion coupling effect, the corrosion environment and the corrosion situation of anchors, where the anchors are buried in the Jiaodong Coal Mine in Jiaozuo City, Henan Province, are discussed. The spot corrosion, pitting corrosion, weight loss, corruption speed and strength loss rate, etc. are study. The results show that the strength loss rate of naked-scaled anchor is about 14.0%, the diameter loss about 10.0%, and the sectional area loss about 19.0% under the medium corrosion condition. Especially, the weight loss rate is extremely unevenly distributed: the maximum rate is about 24.4 times against the minimum one. After 17 years, the limit tension load is 18.4%~22.2% lower than that of the new one. The data of durability and service life of the 17-year anchor are acquired, which can provide references to the investigation of the protective countermeasure against the corrosion of anchor.

Key words [mining engineering](#) [anchor](#) [durability](#) [service life](#) [in-situ test](#)

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