

聚丙烯纤维混凝土喷层支护技术及其在顾桥矿区的应用

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摘要 根据聚丙烯纤维混凝土结构力学原理, 研究聚丙烯纤维混凝土喷层在煤矿锚喷巷道支护中适用性。结合淮南顾桥矿区典型锚喷巷道工程, 完成聚丙烯纤维混凝土喷层的合理配比及抗拉、抗压、抗剪等指标的室内试验。与素混凝土喷层相比, 聚丙烯纤维混凝土喷层中的应力分布较均匀, 有较好的让压能力。工业性试验表明, 聚丙烯纤维混凝土喷层抗拉强度高、韧性好、回弹量低、工艺简单等特点, 具有较高的推广应用价值。

关键词 [采矿工程](#); [锚喷支护](#); [聚丙烯纤维混凝土](#); [喷层](#); [工业性试验](#)

分类号

SUPPORT TECHNOLOGY OF POLYPROPYLENE FIBER CONCRETE SHOTCRETE LAYER AND ITS APPLICATION TO GUQIAO COAL MINE

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Abstract

According to mechanical principle of polypropylene fiber concrete structure, the applicability of polypropylene fiber concrete in the coal mine spray tunnel protection is researched. Combined with the typical anchor spray tunnel of Guqiao Mine, the reasonable proportion, tension, resistance of compression and shear of polypropylene fiber concrete spray layer are completed by laboratory test. Compared with the general concrete spray layer, the stress distribution is more homogeneous and the yield capacity is better. Industrial experiment shows that the tensile strength and toughness of the polypropylene fiber concrete spray layer are higher than those of general one. The rebound of the polypropylene fiber concrete is low and the construction technology is simple. Therefore, it has wider application.

Key words [mining engineering](#); [shotcrete support](#); [polypropylene fiber concrete](#); [spray layer](#); [industrial experiment](#)

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