

脆性材料在双向应力下的断裂实验与理论分析

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摘要 研究了脆性材料在双向应力下的断裂特性和失效机理,特别是在平行于裂纹的应力对临界断裂参数的影响方面进行了实验上和理论上的研究.采用玻璃、陶瓷等脆性材料进行了平面双向拉伸和单向拉伸试验,并对实验结果进行比较.观测直通裂纹的启裂和扩展过程,证明了双向应力对裂纹驱动力有明显影响,讨论了裂纹扩展的应变准则.

关键词 [双向应力](#) [陶瓷](#) [应力强度因子](#) [应变](#)

分类号

EXPERIMENTS AND THEORETIC ANALYSIS FOR THE FRACTURE OF BRITTLE MATERIALS UNDER BIAXIAL STRESS

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Abstract

The fracture behavior of brittle materials under biaxial plane stress, especially the influence of the stress parallel to the crack plane on critical fracture parameters, was investigated by means of thermomechanical method. Biaxial and uniaxial tension tests were performed with thin glass and zirconia disk specimens. The aims of this study is to clarify the fracture dependence of brittle material in plane stress state and their difference between biaxial and uniaxial tension, based on experimental and analytical...

Key words [biaxial stress](#) [ceramics](#) [stress intensity factor](#) [strain](#)

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