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Title: On the crack path under mixed mode loading on PUR foams**Author(s):** Marsavina, L (Marsavina, L.); Linul, E (Linul, E.); Voiconi, T (Voiconi, T.); Constantinescu, DM (Constantinescu, D. M.); Apostol, DA (Apostol, D. A.)**Source:** FRATTURA ED INTEGRITA STRUTTURALE **Issue:** 34 **Pages:** 387-396 **DOI:** 10.3221/IGF-ESIS.34.43 **Published:** OCT 2015**Times Cited in Web of Science Core Collection:** 0**Total Times Cited:** 0**Usage Count (Last 180 days):** 2**Usage Count (Since 2013):** 2**Cited Reference Count:** 22**Abstract:** In this paper are presented the crack initiation angles obtained in polyurethane (PUR) foams under mixed mode loading. Closed cell rigid PUR foams having three different densities 100, 145, and 300 kg/m(3) were investigated. Experiments were performed using Asymmetric Semi-Circular Bend and Single Edge Crack specimens.

The obtained crack initiation values were compared with four fracture criteria to introduce: Maximum Tensile Stress, Strain Energy Density, Maximum Energy Release Rate and Equivalent Stress Intensity Factor, and a good agreement was observed. This allow to conclude that the theoretical fracture criteria developed for solid material could be used with success to predict the crack propagation angles in cellular materials like PUR foams.

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