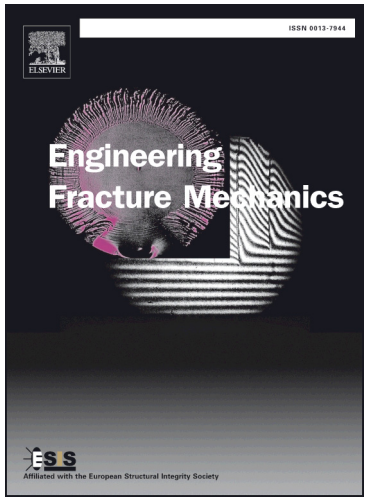

Biaxial fatigue limits and crack directions for stainless steel specimens with circular holes

V. Chaves, G. Beretta, A. Navarro

PII: S0013-7944(16)30636-1
DOI: http://dx.doi.org/10.1016/j.engfracmech.2016.11.022
Reference: EFM 5326

To appear in: *Engineering Fracture Mechanics*

Accepted Date: 15 November 2016

Please cite this article as: Chaves, V., Beretta, G., Navarro, A., Biaxial fatigue limits and crack directions for stainless steel specimens with circular holes, *Engineering Fracture Mechanics* (2016), doi: http://dx.doi.org/10.1016/j.engfracmech.2016.11.022

Biaxial fatigue limits and crack directions for stainless steel specimens with circular holes

V. Chaves [1], G. Beretta, A. Navarro.

Departamento de Ingeniería Mecánica y Fabricación,
Escuela Superior de Ingeniería, Universidad de Sevilla,
Camino de los Descubrimientos s/n, 41092 Sevilla, Spain

Abstract

High cycle fatigue tests have been conducted for stainless steel AISI 304L. The geometry is a thin-walled tube with a passing-through hole. The tests are axial, torsional and in-phase axial-torsional, all of them under load control with $R = -1$. From the tests, the S-N curves are constructed and the fatigue limits are calculated. The crack surface is analyzed, with especial attention to the first 500 μm. The crack has begun close to the point of maximum principal stress at the hole surface and has followed, approximately, the maximum principal stress direction.

Key words: Biaxial test, High cycle fatigue, Notch, Fatigue limit, Crack direction

[1] Corresponding author. Tel: +34-954487311; fax: +34-954487295.

E-mail address: chavesrv@us.es (V. Chaves)