

COB1401 INFLUENCE OF THE NUMBER OF SPECIMENS IN THE REFERENCE TEMPERATURE DETERMINATION: THE MONTE-CARLO APPROACH / INFLUÊNCIA DO NÚMERO DE CORPOS DE PROVA NA DETERMINAÇÃO DA TEMPERATURA DE REFERÊNCIA: MÉTODO MONTE-CARLO

Carlos Alexandre de J. Miranda¹ & John D. Landes²

¹*IPEN-CNEN/SP, SP, Brazil, e-mail: cmiranda@net.ipen.br*

²*University of Tennessee at Knoxville, TN, USA; e-mail: John-Landes@utk.edu*

This work verifies the assumption of six results to determine the master curve for ferritic steels, as stated by the draft #13 of the ASTM E08.08 subcommittee, using the Reference Temperature approach. The Monte-Carlo Method was used to select the analyzed subsets representing the experimental results taken from an infinite 'universe' that fits perfectly the so-called Weibull Three-Parameter probability distribution. This verification becomes important due to the large results scatter in the transition and no defined reliability level in that assumption. A direct approach to address this problem defining an 'universe' represented by a finite set of results was presented in the part I of this work. It showed the necessity of a new approach to consider the infinity possible results given by an experiment. The reliability of the master curve obtained with a given subset of experimental results is indicated as well the minimum number of experimental results necessary to have a confidence level of 90%, 95% or 98% in the obtained Reference Temperature value and the respective Master Curve.

Keywords: *Fracture Mechanics, Transition, Reference Temperature, Reliability*
Mecânica da Fratura, Transição, Temperatura de Referência, Confiabilidade