

# Crack propagation resistance in hydrocarbon transport pipelines

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**Abstract :** The aim of this paper is to determine the propagation resistance of cracks in grade API 5L X70 steel pipes. These pipes are produced by the Algerian company of manufacture of welded pipes (ALFAPIPE), they are intended for the transport of the hydrocarbons. Mechanical tests such as resilience and tensile strength were carried out on specimens taken from pipe ferrules in the longitudinal and transverse directions. The resilience tests are carried out at different temperatures in order to calculate the stress intensity factor. Tensile tests are used to have the mechanical characteristics of the material. The experimental results are then exploited in the modeling part by the software of calculation of the structures using the method of the finite elements, the calculation code is CASTEM 2016.

**Keywords :** Tenacity, fracture, Resilience, Modeling.