

# Prediction of the fracture of a non-alloy steel calm to aluminum by simulation in direct tensile test.

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## Abstract

The mechano-probabilistic study is based on a set of statistical models allowing the understanding of the modes of fracture materials. In our case, we used the model of BORDET which has the distinction of being slightly complex and thin compared to other statistical models. This model takes into account the maximum principal stress at each moment and not the maximum main stress during loading. The Bordet model requires the knowledge of parameters intrinsic to the studied material (unalloyed steel killed with aluminum centered cubic structure). This work allows the optimization of the BORDET probabilistic model parameters; It defines a probability of rupture of the test pieces tested for the estimation of the durability of product. In our case the simulation test is done by quasi-dynamic tensile test for the extension to the cyclic tests.

## Keywords

mechano-probabilistic, modes of fracture, BORDET, quasi-dynamic.

## Biography / Biographies

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