

**RELATIONSHIP BETWEEN MECHANICAL PROPERTIES AND
MICROSTRUCTURE OF CEMENT SLURRIES WITH FIBER FOR
MULTILATERAL WELLS**

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1. ABSTRACT

Multilateral wells are more prone to problems of loss zone isolation during their productive lives than normal wells. Cement systems used in this case have to withstand additional loads and may suffer critical disintegration and/or debonding from the tubular or formation. Several special additives are under test and employed in the petroleum industry, all aiming to improve the mechanical properties of cement sheaths in multilateral wells, and thus assure the hydraulic integrity along the well over its production life.

In this study, mechanical properties such as Young's modulus, flexural strength and Poisson's ratio of cement systems containing fibers are evaluated and correlated with the resulting cement crystallographic microstructure, at different curing temperatures and pressure loads.