

## Transversal Straining of Pressurized Pipeline Caused by Vibration of Damaged Foundation

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**Abstract:** A deformation model of buried pipeline under complicated geotechnical conditions of soil slit fracture is developed. The classical theory of rods on an elastic foundation and the membrane theory of shells are used. The influence of the contingency of cyclic discontinuities of transversal displacement in damaged foundation on the stressed state and limit equilibrium of pressurized pipe has been studied in quasi-static and dynamic statement with analytical methods. It is assumed that the frequency of kinematic perturbation does not exceed the cutoff frequency of the system.

**Keywords:** pipeline, damage foundation, transversal vibration, quasi-static and dynamic stresses