A new elasto-plastic model of the mechanical cone-spigot pipe joint is presented. The model is based on plasticity theory and the finite element method. The model takes into account the internal protective coating of the pipe and the mechanical properties of the materials used. The model allows for the calculation of the operating pressure and contact pressure, as well as the conditions for achieving equal strength at different combinations of mechanical properties of metals and sizes of the pipe. The model can be used to improve the calculation method and to ensure uniform strength of the pipe connections. The model is validated using experimental data from laboratory and industrial tests.


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