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A MICROTUNNEL WITH A VERY LITTLE RADIUS FOR A BIG PIPELINE

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Abstract: The use of the curvilinear microtunnel in c.a., for the installation of large diameter pipelines carrying natural gas, is now a well-established practice to overcome watercourses or major infrastructures. The choice to build a microtunnel with a curvilinear profile allows to significantly reduce the depth of pushing wells and the receipt of drilling and, consequently, the risks associated with underground work.

The mechanical characteristics of the steel pipe to be positioned in the microtunnel heavily affect its size as the elastic radius of the pipe determines the minimum radius of the curvature of the microtunnel. In the case in question, a ND 1400 (56 ") steel pipe with a usual bending radius of about 1.600 m was laid to cross the Highway "Autostrada del Sole" by means of a microtunnel with an internal diameter of 2.100 mm.

For the first time in the microtunnel, which we call "Costa Rica", of only 156 m length, it was possible to lay the pipeline with a radius of curvature reduced to only 800 m, much lower than that normally used. This was possible thanks to an innovative design choice that entrusted the success of the work to the perfect execution of the microtunnel along the project profile and the ability of the workers responsible for assembling the pipeline to manage it with absolute skill. The construction of the entire work, including the laying of the pipeline, was carried out in a shorter time and with absolute precision.