

## Summary

In this study, concerning the backfilling of service trenches of buried pipelines, it is shown by means of analytical simulations, which consequences on buried pipelines arise from the conventional installation in trench keeping to the present technical standards and relevant rules concerning pipe-laying and road repair works. In particular the consequences resulting of the backfilling of the pipe-zone including the usually existing imperfections of the neighbourhood of the pipes, and the consequences due to compaction in the refilling-zone of the service trench are considered. Contrary to the usual assumption the compaction of the backfilling material in the service trench can cause considerable stress and deformation of buried pipelines, especially of plastic pipes, exceeding the load and stress situation to be expected during the operating phase of the pipeline.

Furthermore this study deals with so-called stabilized backfilling materials, which are installed in wet consistency in the service trench and become hardened in time. These materials offer a lot of technical and economic advantages, particularly if the demands made on these backfilling materials are proved by performance capability tests and quality assurance tests, which are described in this study in general terms.

Taking the results of this theoretical analysis as a starting point it seems to be necessary to go ahead with further investigations on backfilling materials and to gain additional experience by taking measurements on buried pipes in service trenches.