EQUIPMENT AND TECHNOLOGY FOR TRENCHLESS LAYING AND REPLACEMENT OF PIPELINES AND METAL PIPES

Description
The developed methods and equipment allow:

- Trenchless replacement of cast-iron, ceramic, and asbestos-cement pipes (diameter 10-400 mm);
- Pneumodrilt trenchless laying of iron pipelines (100-1400 mm dia, up to 80 m long);
- Pneumodrilt forming of cast-in-place piles (diameter 150-300 mm), and ground compaction to a depth of 10 m.

Fig. 1. Equipment for trenchless replacement of pipelines.

Fig. 2. Trenchless replacement of a pipeline.

Technical appraisal and economic benefits

- Pipeline replacement through boreholes, without total digging up the surface;
- Applicable in a wide range of diameters (in case of steel pipe laying by pneumodrilts);
- Savings on costs due to 6-10 times reduction of earthwork at preparatory and closing stages;
- Compressed air delivered from the front or the back end of the machine;
- Mobile power supply from a portable air compressor;
- High advancing precision (in steel piping by pneumodrilts);
- Possibility for winter replacements.

Application areas
The equipment is applicable at urban water pipelines or at construction sites.
Development stage
Full-scale manufacturing started. The technologies and the equipment are disseminated in Russia and abroad.

Patent situation
The technologies and the design are covered by patents from the Russian Federation, USA, France, Germany, Ukraine, Byelorussia, and Latvia (1995 – 2002).

Commercial offers
Production and vendor contracts.

Estimated Cost
Equipment set for horizontal piping:
- pipe diameter 100-219 mm …. 13,350 US$;
- pipe diameter 273-500 mm …. 20,460 US$;
- pipe diameter 500-720 mm …. 23,650 US$;
- pipe diameter 720-1,220 mm …30,760 US$.

Equipment set for trenchless replacement of pipelines for plastic pipes:
- pipes diameter 110 mm …. 9,860 US$;
- pipes diameter 160 mm ….11,070 US$;
- pipes diameter 225 mm ….13,620 US$;
- pipes diameter 315 mm ….14,790 US$.

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