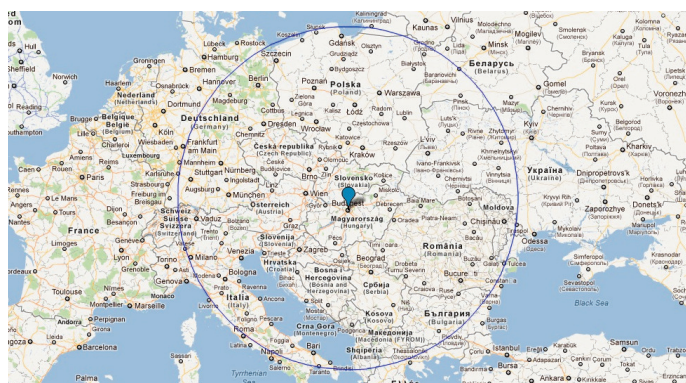


PIPE BURSTING

Pipe bursting is a **trenchless method** to replace collapsed, leaking, or otherwise damaged pipelines, without the need for open cut construction. Pipe bursting may also be used to increase pipeline transporting or load bearing capacity. Extensive development activity of the gas and water industries has demonstrated the feasibility of upsizing gas mains, water mains and sewers.

This method is fast, non-invasive and environmentally friendly, using the existing pipeline as a guide, whereas the existing manholes (with min. diameter of 1000 mm) can function as launching and receiving pits. In this case, the disruption of soil environment and surface traffic is minimal. During the execution a pipe bursting head is pulled through the old defective pipe. Its impact energy bursts the old pipe and displaces the fragments into the surrounding soil. A new, stronger (mostly polyethylene) pipe with better hydraulic characteristics, of equal or larger diameter, is pulled in simultaneously behind the head, replacing the old pipe. If the ground plasticity allows, the new pipe carrying capacity to be even increased by up to two nominal sizes.

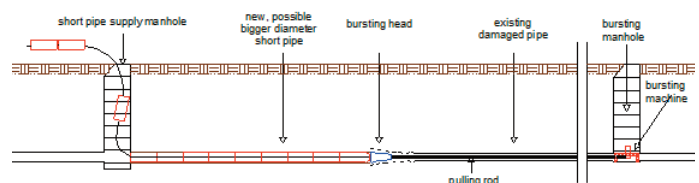
SYCONS LTD. has considerable expertise in pipe bursting. Our complete range of equipment and several years of experience in the field enable us to competitively carry out full service construction within **800 kilometers of distance from Hungary**.



Advantages:

- Significant reduction of site traffic and truck rides
- Low emissions, high quality and safety standards
- Construction times are reduced by up to 50 %
- 90 % less excavated material
- Applicable for all types of damaged pipelines
- Suitable for downtown and historical, narrow city areas, for sewer, water, or gas pipes
- Construction does not depend on the weather, can be carried out even during the winter season
- Executable under groundwater level, without dewatering (except for the working shafts)
- Installation quality is similar to open trench method
- New pipe with up to 100 years of service life (plastic pipes according to manufacturer's specifications)
- Capacity can be even increased by one or two nominal pipe sizes
- With more than 50.000 km length it is the most frequently applied pipe renewal technique worldwide

It is the ideal pipe replacement technique for various old pipe types including **clay, steel, asbestos cement, concrete and pitch fibre**, installing diameters from up to **400 mm** and in lengths up to **100 m**.



Scheme of the pipe bursting method through (existing) manholes



Demonstration of the bursting head, penetrating the existing pipe



Feeding of the bursting equipment with HDPE pipe sections

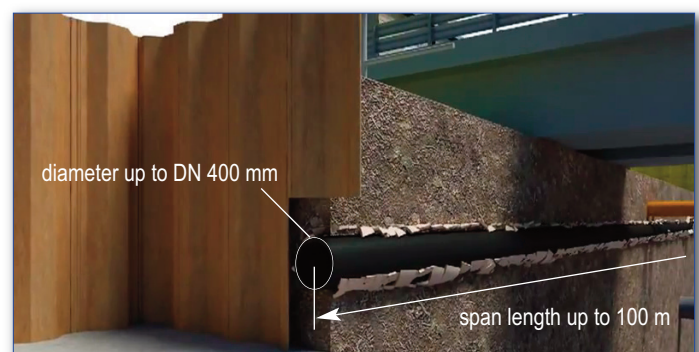


Illustration source: www.trenchlessolutions.co.uk

PIPE BURSTING

REFERENCES FROM THE PAST YEARS

SYCONS LTD. has several years of experience in pipe bursting. The following is a list with a few examples of projects realized in the last 10 years:

Short description	Location	Pipe size (original/replacement)	Pipe material	Length	Year
Public sewage pipe renewal	Sopron, Hungary	DN 250 / DN 250	clay replaced with HDPE	25 m	2009
					
Public drinking water pipe renewal	Gárdony, Hungary	DN 300 / DN 225	concrete replaced with HDPE	28 m	2006
					
Richter Gedeon factory industrial pipe renewals	Dorog, Hungary	DN 300 / DN 300 DN 160 / DN 160	eternit replaced with PP and HDPE	181 m 32 m	2006 2007
					
Public sewage pipe renewal	Rudabánya, Hungary	DN 300 / DN 225	concrete replaced with HDPE	336 m	2005
					
Public sewage pipe renewal	Budapest, Hungary	DN 300 / DN315	concrete replaced with HDPE	98 m	2004
					
Public sewage pipe renewal	Monor, Hungary	DN 300 / DN 400	concrete replaced with KG-PVC	717 m	2002