



**AARSLEFF**

# NO-DIG

STATE-OF-THE-ART TRENCHLESS PIPE RENEWAL



BEHIND EVERY GREAT CITY IS GREAT INFRASTRUCTURE



# NO TROUBLE

NO-DIG PIPE  
RENEWAL IS FAST  
AND COST-EFFICIENT,  
MINIMISES  
DISRUPTION AND  
SAFEGUARDS THE  
ENVIRONMENT

W

hen the city of Copenhagen realised a large section of sewer pipe had to be replaced beneath the city centre, they

imagined catastrophic disruption: months of expensive excavation, permanent traffic jams, lost business and outraged citizens.

Aarsleff had a better idea.

Aarsleff Pipe Technologies is the market leader for No-Dig pipeline renewal – the most reliable and cost-effective method available for the renewal of complex pipe systems.

Leaking pipes can be a serious threat to health, safety and the environment. Thanks to the No-Dig method and Aarsleff's own technology, a robust lining can be securely fitted inside a damaged pipe system to render it completely as new without the need to excavate or replace any of the existing infrastructure.

This unique approach enables local authorities, homeowners' associations and industrial companies to implement complex pipe renewal projects with minimal disturbance to the surrounding area.

The history of the Wilanow Palace in Poland dates back to the 17th century. With great care and respect for this historical building, its sewer and rainwater pipes were renovated using the CIPP method. In cooperation between the employer and Aarsleff, several projects have been successfully implemented at the Palace without excavations.



#### A clear advantage

Aarsleff's innovative trenchless solution offers enormous financial and practical advantages when compared to traditional excavation methods.

No matter whether the pipes are beneath roads, companies or homes, the No-Dig method makes it possible to fully restore piping systems of any size and scope to optimal condition at a far lower overall cost than to excavate and replace the existing pipe. Requiring only a single entry and access point and with no need to unearth sections of existing pipeline, the process can be completed

quickly, efficiently and economically, even in hard-to-access locations. Most importantly, Aarsleff's No-Dig method results in virtually no disruption to residents, businesses, traffic flow or train lines, which significantly reduces impact on the local economy.

And because we design, produce and implement our own solutions in-house, we are able to offer flexible, turnkey solutions without the need to involve external contractors. Not only does this keep costs low but it enables us to maintain our own high standards of quality and efficiency across the value chain.

Rijswijk, Netherlands



Dresden, Germany





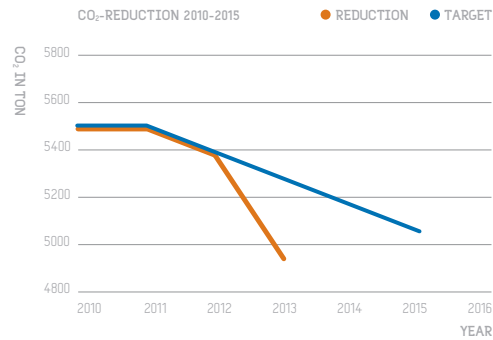
# NO 1

AARSLEFF HAS  
BEEN A PIONEER  
OF NO-DIG  
TECHNOLOGIES  
FOR MORE THAN  
40 YEARS

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**S**ince 1978, Aarsleff has been a leading developer of No-Dig technology with unmatched experience gained from countless projects worldwide. Today, we offer the most effective and reliable trenchless pipe renewal solutions on the market.

### Lining the future

Aarsleff is the innovator behind Cured-In-Place Pipe Lining, or CIPP Lining, a highly effective method for renewal of horizontal and vertical pipes in the ground or in buildings, that has an expected lifetime of at least 100 years. Uniquely adaptable to a wide variety of applications, CIPP Lining is often used to renew sewage pipes, drinking water pipes, industrial process pipes, vertical pipes and ducts in buildings.

We offer a range of CIPP Linings, specific to particular situations, which are inverted into existing pipes then cured with light, steam or water. Our specially engineered material produces less frictional resistance than the pipe's original structure, so it maintains the same level of hydraulic capacity after renewal.

As a pioneer of advanced No-Dig technology, we will continue to spearhead innovation for the global sector. Over the years, our industry has evolved but our vision has remained the same: to meet our customers' demands with ever more cost-effective and reliable solutions that will last long into the future.

*LED curing, Copenhagen, Denmark  
Olympic Tower, Helsinki, Finland*



### INNOVATION THROUGH STIMULATING WORKING RELATIONSHIPS

The utility company Aarhus Water has worked with strategic partnerships with Aarsleff for several years. The purpose is to develop the forms of collaboration and make them user-oriented. Based on research and development, calculated risks are taken in order to create radical renewal. An example of the results that are of benefit to all parties is the reduction in CO<sub>2</sub> emission.





PLANNING / MANUFACTURING / INSTALLATION

**CIPP INSIDE BUILDINGS**

**DIMENSIONS**

Ø 63-150MM  
HORIZONTAL  
AND VERTICAL

CIPP inside buildings

CIPP

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# RELATION / DOCUMENTATION

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## CIPP

### DIMENSIONS

Ø 100-2200MM

LENGTH 0-600M

THICKNESS 3-50MM

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## GRP

### DIMENSIONS

Ø 1000-3000MM

### PROFILES

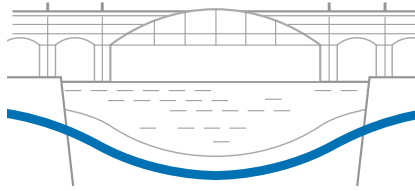
ALL PROFILES



GRP

AIRSLEFF GRP





# A

arsleff offers some of the best engineers in the business and decades of hands-on experience from projects across Europe.

This experience is often drawn from our local subsidiaries, which means customers benefit from additional speed and efficiency. Today, we offer a complete spectrum of technologies and services that can be tailored for every application, and which enable us to meet and overcome every new challenge.

Beneath the river Moscow in the Russian capital city of Moscow, several siphons have been fully renovated using Aarsleff CIPP lining. The process minimised any disruption to the river and road traffic. Even in temperatures as low as minus 20°C our team were able to clean, inspect and renew the siphons, installing replacements up to 300m long and with diameters of 800-1400mm.



The sewer system in Frankfurt am Main was constructed at the beginning of the 20th century using four main pipes. One of the pipes was in such a bad condition that a renewal was required. Since the pipe was located directly beneath the city's tram lines, it was important to find a solution that would not affect the tram service. Aarsleff was able to install egg-shaped GRP profiles, up to 2000mm in height, that could be transported to the damaged pipe without disrupting the surroundings. Thanks to a highly successful working relationship, we were able to complete the project more than a year ahead of schedule.

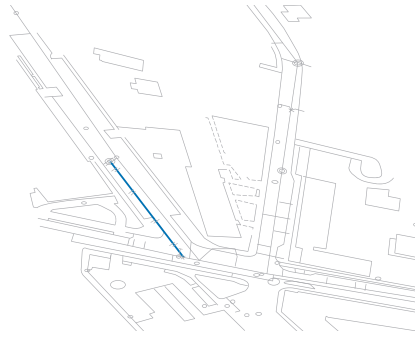


### A complete product portfolio

With such a vast knowledge pool at our disposal, there is almost no limit to the scale or scope of project we can undertake. No matter whether it is public or private, simple or complex, industrial or even under extreme environmental conditions, we can help provide the expertise and know-how to solve any pipe renewal problem.

We offer a complete product portfolio that can be applied to every type of pipe system, from extensive sewers to simple chimneys and pressurised or extremely long pipes, often without the need for disruptive demolition or excavation, unless it proves to be the most appropriate solution.

Our No-Dig solutions match all pipe profiles from 63mm to 3000mm in diameter, and can be tailored to enable pipes of varying dimensions to be renewed in one single operation. For very large pipe diameters GRP solutions are available to renew pipe systems with specially designed materials and profiles.



# A

t Aarsleff, we take great pride and care to deliver a consistently high standard of quality and results.

Our No-Dig technology is created and upgraded at our own high-tech laboratory, produced in our own factories and stored across Europe ready at a moment's notice.

### A focus on value and results

By keeping development and production in-house, we are able to offer better value for customers through lower costs and stringent quality control.



### LONG-TERM PREVENTIVE PLANNING

In 2003, Hofer (formerly Copenhagen Energy) decided to carry out a thorough condition assessment of all the main pipes and laterals in Copenhagen. All pipes were CCTV inspected so we could prepare detailed plans for which pipes needed to be renewed over either a short-term or a long-term period. This process enabled us to avoid urgent excavations in arterial roads.

From start to finish, each stage of the project is carried out in close cooperation with the customer to maintain transparency throughout the process.

Projects begin with an initial survey and pre-job CCTV inspection, if desired, for analysis on the best choice of renewal methods.

Any additional requirements from authorities and partners are also integrated into an overall plan and approach that covers everything from strict timeframes and budgets to longer-term multi-annual framework agreements and ongoing maintenance programmes.



Aarsleff's international network, strategically located across Europe, allows us to mobilise teams and equipment as soon as a request is received. To ensure every project goes smoothly and successfully, our consultants, project managers and engineers undergo extensive training to ensure they are fully prepared for every situation.

In addition, should the circumstances require the development of a new type of product, our specialist research laboratories are standing by to create a tailored solution.



# NO WORRIES

A GLOBAL PRESENCE,  
6200 STAFF AND  
DECADES OF  
EXPERIENCE  
ON YOUR SIDE







**A**s Europe's leading specialist, Aarsleff offers highly dependable, long-term solutions plus the reach and resources to deliver even the most complex pipe renewal projects with consistently high quality results.

#### Quality assurance at every stage

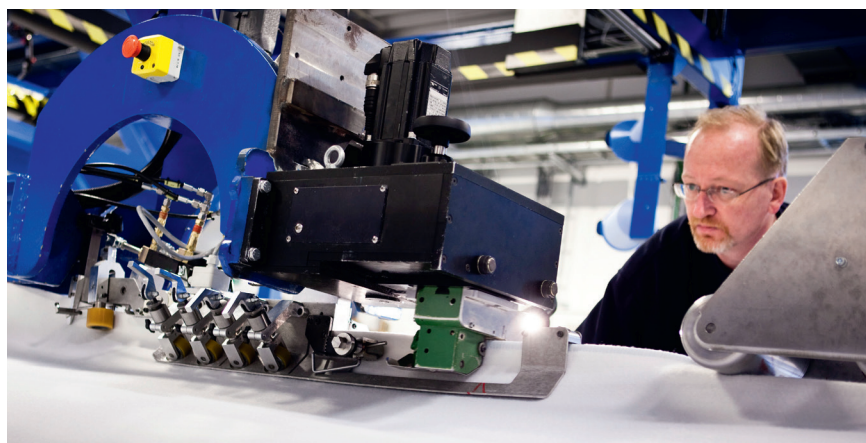
Aarsleff Pipe Technologies is backed by Per Aarsleff A/S, one of Denmark's biggest infrastructure contracting groups with more than 6200 employees worldwide. With such extensive resources behind us, we have been able to develop



superior technology and quality control processes that provide innovative No-Dig solutions via a dedicated support network.

The extensive quality assurance is reflected across our R&D facilities, production factories, global offices and a broad product portfolio that complies with all international standards in every country in which we operate. We are fully accredited; Aarsleff in Denmark is affiliated with the Control Scheme for Danish CCTV Inspection Companies (DTVK), the Control Scheme for Pipeline Rehabilitation and we have all necessary ISO and DIBT certifications for our quality standards as well as for environmental protection.

In Helsinki, Finland, a complete renovation of a main pipe system was performed using the CIPP method. During the renewal process, a huge bypass was installed to maintain the system's water capacity. Twelve installations each with a diameter of 1.4m and a total length of 1.7km were completed.



By industrialising pipe technologies, Aarsleff delivers an exceptional pipe renewal service that ensures the best possible results at the smallest possible financial and practical cost – a service that is strengthened by the support of our parent company, our leading market position and by our passion to create ever more innovative solutions.



# AARSLEFF

Since 1978, Aarsleff has been a leader in developing and implementing No-Dig technology. We carry out complex renewal projects in Europe and globally and are able to renew all types of pipe systems, even under very extreme conditions.

Aarsleff Pipe Technologies is a division of Per Aarsleff A/S, a Danish infrastructure contracting group with more than 6,200 employees worldwide, over €1.5 billion revenue and activities including piling, construction and infrastructure work.

## AARSLEFF LOCATIONS

[www.aarsleff.com](http://www.aarsleff.com)

