

SP Technical Research Institute of Sweden

Our work is concentrated on innovation and the development of value-adding technology. Using Sweden's most extensive and advanced resources for technical evaluation, measurement technology, research and development, we make an important contribution to the competitiveness and sustainable development of industry. Research is carried out in close conjunction with universities and institutes of technology, to the benefit of a customer base of about 9000 organisations, ranging from start-up companies developing new technologies or new ideas to international groups.

The Group's comprehensive skills

Our various profile areas bring together technical departments and subsidiary companies. This enables us to meet requirements for a multi-disciplinary approach and expertise in a wide range of fields and deliver high-quality results for all aspects of the innovation process, from research and technical development to market introduction assistance services.

Energy and Environment



Building and Construction



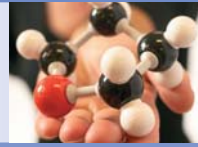
Wood Technology and Wood in Construction



Fire, Risk, Safety and Security



Materials Technology and Chemistry



Foods



Mechanics and Automotive Industry



Electronics and ICT



Measurement Technology and Calibration



Certification



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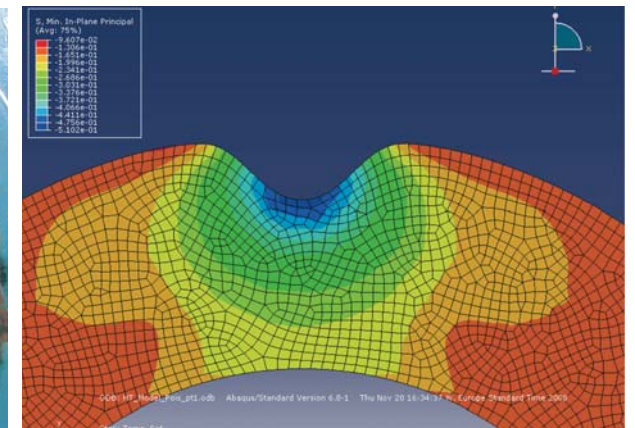
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INSTITUTES



SP Pipe Centre

– Centre for research and development of pipes and pipe systems

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SP Pipe Centre

The working infrastructure you don't think about

Underground pipe systems are often something you don't think about because you can't see them and because they usually work as planned. They stand for an essential part of the infrastructure in a society with large investment costs. For the last 40–50 years, plastics have been used for water and waste water pipe systems, as well as gas pipe systems. For insulated pipe systems, supplementary materials are also used.

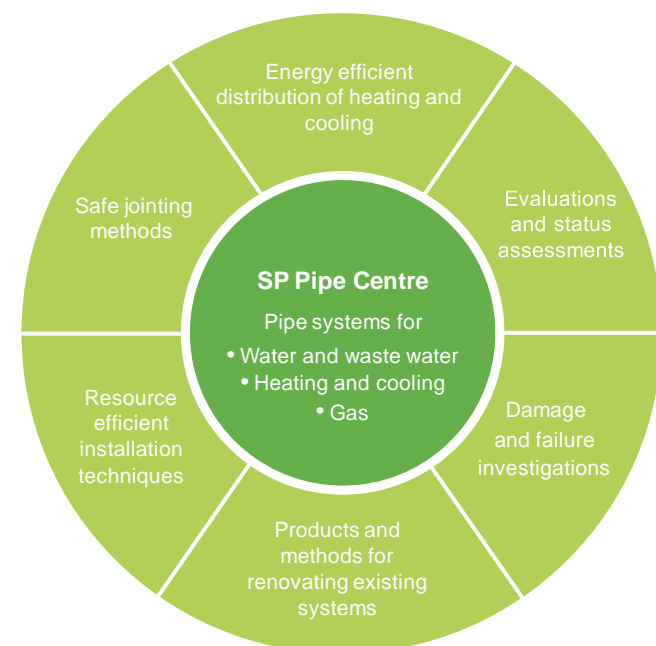


SP Pipe Centre

Owners want to make sure that the systems are robust and have a long life, because the costs for installations and failures are considerable. Today, a desirable life of 50-100 years is discussed. From the beginning of the plastic material era, SP has been present evaluating the quality of pipes and pipe components. In parallel, similar products as, e.g., hoses used in vehicles and other applications are also evaluated. The common denominator is robust components, which contain fluids and should have a long service life in a specific environment.

A new centre of excellence gathering the forces

There is an ongoing development of materials and optimization of products. The demands on the system increase regarding longer life, cheaper installations and renovations, and reduced replacement costs. Methods and the knowledge have to be refined continuously. Lower costs for installation and system maintenance may be the most important issues in the future. SP Pipe Centre is a centre of excellence within SP and it was founded 2009 to further highlight and meet the needs and demands concerning the specialized knowledge in the field. Our strength is the breadth of SP's expertise, allowing for large complex problems to be solved.



Who benefits from our knowledge and services?

We cooperate with a broad spectrum of pipe and material manufactures, contractors, network owners, sector associations, Universities and research funders both national and international. Our vast experience and knowledge in this area lets us take part in a continuous dialog discussing and solving important issues. Work in standard committees and other regulating institutions both nationally and internationally gives us an exchange of knowledge and a continuous field update and natural contacts. Through our publications and the participation in field forums we reach out and share our knowledge. You are also welcome to be part of our knowledge and services!

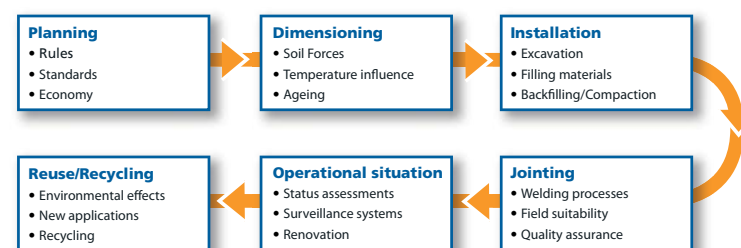
Research – an important way to reach deep knowledge

An important corner stone is a good understanding of the environment which the systems endure during their service life. This understanding and specialised knowledge about the materials and the products allow for developing methods and tools for gaining necessary and complete knowledge about the robustness of the products and the expected technical and economical life. The most important areas are pipe mechanics, pipe technology, plastic material technology, pipe and soil interaction, experimental methods for accelerated ageing and computational methods.

The sector is supplied with technical services

The demand for technical services exists in different areas. A large part is linked to material and product testing for evaluating characteristics, e.g., during the material and product development

Important parts of the life cycle of a pipe system



process or when irregularities in the production process occur. Third party investigations are also an essential part of assuring the quality of, e.g., imported products.

In connection to damages and failures, it is essential to investigate the causes, because the consequences are great. The causes can be due to incorrect handling, wrong dimensions or the installation procedure that was used. Sometimes the causes deal with sequences of coincidences or low quality products. We carry out damage and failure investigations and supply our customers with independent statements or advice.

Plastic pipes for water and waste water, gas and district heat systems

We carry out testing according to in principle all standards concerning pipes and constructions in the ground such as chambers and mud separators of polyethylene (PE), polypropylene (PP), polyvinyl chloride (PVC), cross-linked polyethylene (PEX). A foundation for licensing according to Nordic Polymark is established.

Examples of evaluations concern high pressure pipes according to EN 1555 (gas), EN 12201 and EN 1452 (water) and waste water pipes according to EN 1401, EN 1852 and EN 13476.

Raw material evaluations for classifications of high pressure pipe materials are carried out according to ISO 9080.

District heating pipes, parts and joints

Testing and evaluations are carried out according to available standards or customers' desires. SP tests and evaluates usually according to the following standards:

EN 253 – service pipe, casing, insulation material and pipe assembly.

EN 448 – fitting assemblies

EN 489 – district heating joints (the situation in the ground is simulated)

SP is one of few Euroheat approved laboratories for inspection and testing for European certification of district heating pipes. We are responsible, together with Swedish District Heating Association, for the Swedish P-marking of district heating pipes. The basis for the approval is the standards EN 253 and EN 448.

Product inspections and certifications guarantee the quality

Several components in pipe systems including the pipes are usually certified. This means that the materials and the products fulfill the requirements in the standards and that the production is subjected to internal testings and audits. SP, as accredited institution, carries out type testing, inspections and audit tests. We establish the foundation for Nordic approval (Nordic Polymark) issued by INSTA-CERT, CE-marking (according to harmonized standards) P-marking (SP's certification demands), Type approval (SITAC), VA-approval (ETA Denmark).

Certificates are issued later by an independent certifying institution, e.g., SP's independent certification cooperation. More information concerning certifications is found on SP's home pages.

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