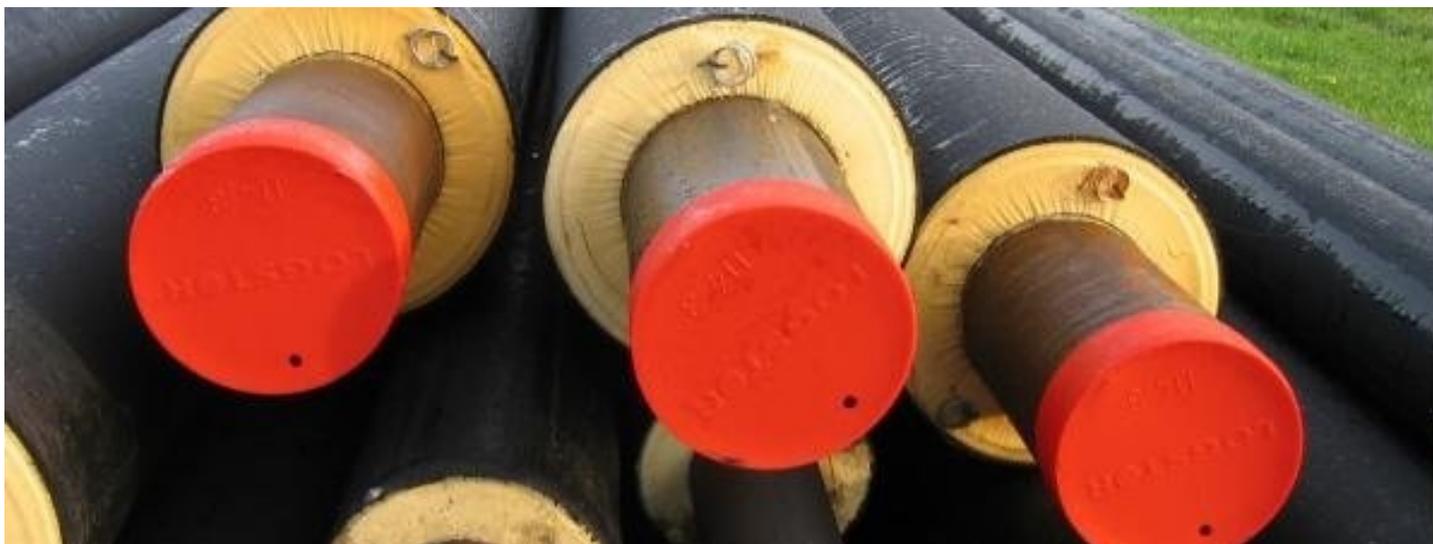


## Assessment of sleeve connections for heat energy distribution networks



**The quality of (city) heating networks depends to a significant extent on the quality of the connections in the pipelines.**

Leaks that allow water ingress, which often occur in sleeve connections, can lead to degradation of the insulation with all the resulting effects on thermal insulation performance, and may cause corrosion of the steel pipe that transports the medium. Consequently, the quality of these sleeve connections needs to be assessed when installing networks of this type.

It is important for both the operator of heat energy distribution networks and the contractor (the party constructing the network) that the sleeve connections are engineered to high quality standards in order to avoid high costs caused by leakage at a later stage.

For an operator, checking sleeve connections is a way of monitoring the work more effectively. This activity can lead to the early detection of faults and the final network will be of a higher quality.

Because we are an independent and expert party, Kiwa Technology is your ideal partner for support in this area. Sleeves can be assessed in our laboratory based on chemical and physical analyses, mechanical tests and microscope analysis. The tests may vary from leak-tightness tests and determining the degree of adhesion between the sleeve and the PE protection pipe to displacement tests (axial decohesion test) and checking the water permeability of PUR foam (open-cell structure) according to EN 253. These tests allow assessment of the quality of sleeve connections and, if the sleeve is not satisfactory, a cause can also be identified in many cases. A detailed overview of the available test options can be found [here](#).

An example of quality control of joint installation in pre-insulated pipe systems in district heating networks is given in the paper (see download paper), as presented on "The 14th International Symposium on District Heating and Cooling (DHC14).

In addition, Kiwa Technology offers the option of carrying out leak testing on site in order to provide immediate information on the quality of the sleeve connections in the installed network.

Your needs as a customer must be clarified first in order to identify the correct test method. An important step, as each problem and therefore each project is unique. Based on your information, Kiwa Technology will put forward a detailed test programme and price proposal. In the event of approval, the tests will be executed and the conclusions and recommendations reported (in writing and/or

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verbally). Obviously you are kept informed of progress and receive interim results during the course of the project.

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