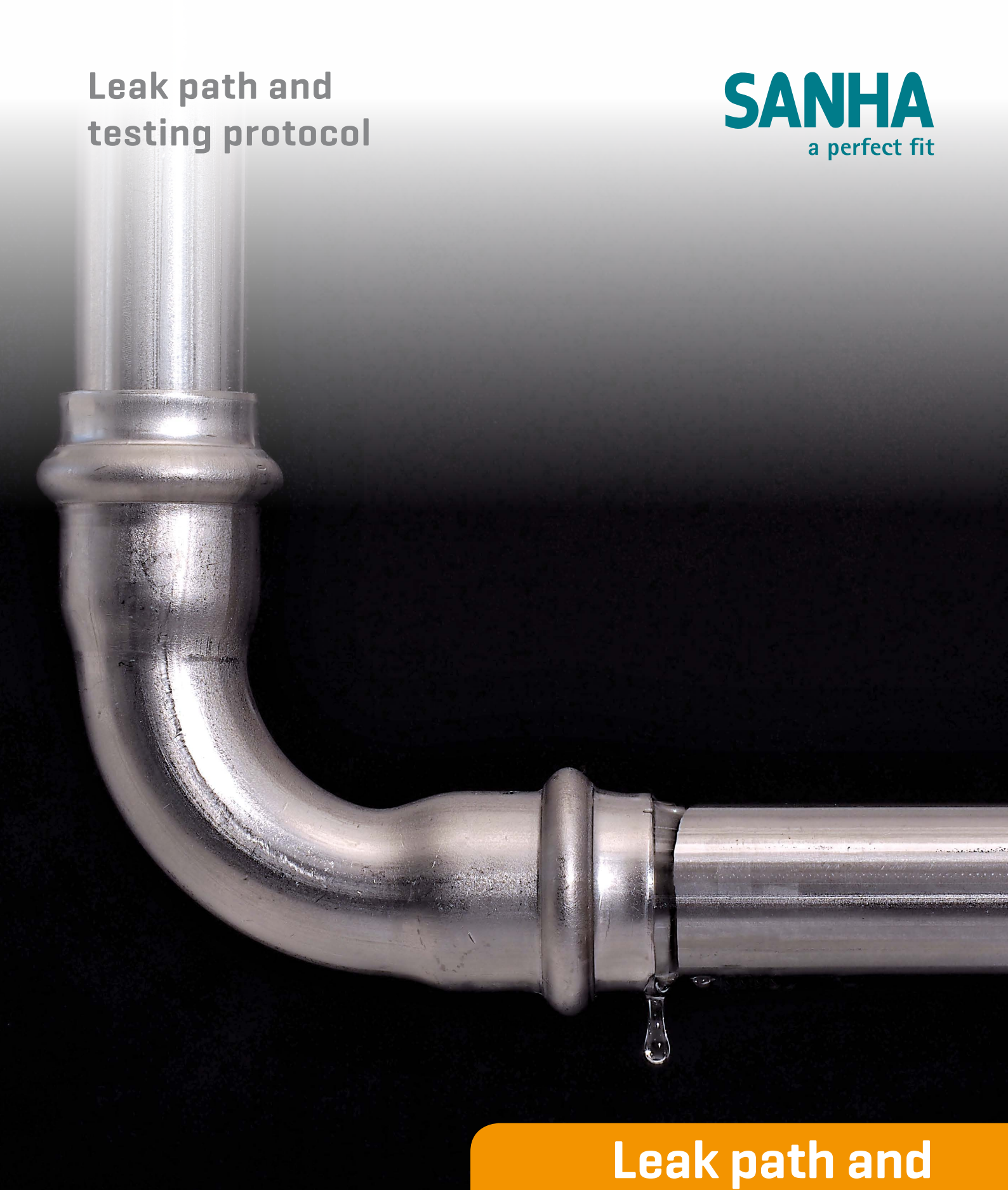
SANHA
a perfect fit



Leak path and testing protocol

Leak path protected: A practical function which enables you to detect simply if connections have been left un-pressed.

Leak path and testing protocol

In piping, nothing is more important than a safe and tight connection. To help installers in this regard, SANHA has not only integrated the Leak Path Feature into our press fittings but also offers recommendations on how to properly test the connection.

When un-pressed, all SANHA press fittings* are designed with a feature that will allow a small amount of water, or gas, to escape from the un-pressed joint. This is known as a 'Leak Path'. This feature may take the form of either a specially engineered section of the sealing ring, or tolerances within the fitting itself.



combipress
= Tool Compatibility
+ Push & Stay
+ Leak Path Feature
exclusively from SANHA

Water

When filling a system, constant checks should be made for early signs of the 'Leak Path' identifying an un-pressed fitting.

If testing with water, the system should be commissioned within 24 h. SANHA therefore recommends testing with compressed air or inert gas.

- Ideally, pressure testing should be done with water that is as close to ambient temperature as possible. Using water that is heated can cause a false pressure drop reading if allowed to cool over an extended 'Tightness Test' period (i.e. one or more hours). We recommend a 30 minute settling period to allow any temperature variances to equalise. The ambient temperature, and the water temperature, should be recorded in the 'Pressure Test Log'.
- Once filled, care should also be taken to ensure that all air is removed from the system.
- **Preliminary test:** Once the system has settled, the 'Leak Path' test should be carried out at 1 bar, for a period of 10 minutes. During this time, we recommend a visual inspection of all joints and connections, and this inspection should be recorded on our 'Pressure Test Log'. If a SANHA fitting has been left un-pressed, then the un-pressed fitting should be visible as a bead of water coming from the un-pressed joint.
- If an un-pressed fitting is detected, the pressure should be released from the system before the fitting is pressed. Please also ensure that the pipe is still inserted to the correct depth before pressing. Once the press has been completed, the test should be repeated.
- **Main test:** Once the 'Leak Path' test is complete, then the 'Tightness Test' can begin. Testing a drinking water system should be done at 1.1 times the Maximum Operating Pressure (MOP), and with a heating or chilled system at 1.3 times the Maximum Operating Pressure (MOP). If pressure testing above the maximum capability of the system, usually 16 bar, please contact SANHA for guidance.
- If high operating pressures are required, we would suggest that the pressure is built up in stages. For example, raised to five bar for ten minutes, then raised to ten bar for 10 minutes and finally to 16 bar (maximum pressure capability). This is not mandatory, but if a fitting has been pressed but is incorrectly installed, and it fails, it is better that it fails at a lower pressure.

* except those in the Industry/Solar series

Different procedures should be followed when testing with water or air and gas.

We recommend that any test of a SANHA system should comprise of two parts: Firstly, a low pressure test, which will allow any un-pressed fittings to be identified by the 'Leak Path' feature, and the second part of the test at a higher pressure to act as a 'Tightness Test'. Both the 'Leak Path' and the 'Tightness Test' test should be carried out and recorded on our 'Pressure Test Log', which can be downloaded from our website, www.sanha.com/download.

It is recommended a 'Leak Path' test is carried out where possible with air, to minimise any inconvenience caused by leaking joints, and delay the introduction of water or fluids until the system is ready for commissioning.

The 'Leak Path' is designed to work at low pressures, i.e. at 1 bar or less. At higher pressures, the force of the water or air/gas may compress the sealing ring against the fitting and inadvertently seal the 'Leak Path'. This is why the 'Leak Path' test must be carried out at a maximum of 150 mbar for air/gas or 1 bar for water.

- It is important that all equipment used for pressure testing must be of a suitable standard and of serviceable quality.
- Pressure testing must be carried out by a competent person to a specified method.
- All pressure testing of the press connections must be seen as a secondary inspection to the visual appraisal of each pressed joint including the operative's individual mark.
- All tests must be approved by the client.

Caution, when testing a pipe system under pressure, please consider all possible health and safety risks.

Air/Gas

When testing with air or gas, at pressures higher than 1 bar, due care and attention must be taken when considering the potential health and safety hazards to workers in the vicinity. Air or Gas, when compressed to high pressures, can store significant energy. In the event of a joint failure due to a fitting being incorrectly installed, this energy, which if released suddenly, can have an explosive-like effect.

- Always ensure the temperature of the testing air or gas, which must be oil free, and the ambient temperature are as close as possible. It is advisable to allow a settling down period of approximately one hour depending on the volume of the system.
- **Preliminary test:** The initial air test is a 'Leak Path' test, and should be at 150 mbar for a minimum of 120 minutes, for a system with a volume up to 100 litres. An extra 20 minutes of testing time should be added for every additional 100 litres of system volume.
- No pressure drop is to be permitted during this test period. Record the results of the test on the 'Pressure Test Log.



Once the 'Leak Path' test has been completed and passed, a second 'Tightness Test' or mechanical strength test can then be commenced. A maximum pressure of 3 bar, for a period of 10 minutes is recommended. We also suggest the pressure is elevated in steps of one bar per 10 minutes. Again, no pressure drop is allowed during this period. If higher test pressures are required, we also suggest the pressure is elevated in steps of one bar every 10 minutes.

- The maximum operating pressure for a system carrying air or technical gas is 16 bar. A system intended to carry fuel gas is rated at a maximum operating pressure of 5 bar.
- If during any testing a pressure drop is detected, then the testing process should be halted, and the location of the leak identified and remedied. A report should be made and kept of the initial failed test. Once the fault has been corrected, the whole pressure test process should be re-commenced from the beginning.

Examples of testing protocols are available from the SANHA website. **For further assistance or clarification, please do not hesitate to contact us.**



Technical product and installation information

SANHA
a perfect fit

With safety on your side

SANHA offers genuine advantages

As a family enterprise for over 50 years we have been observing a simple principle: every pipe and every tting must give the customer added value in terms of safety and practical use at a fair price. This is our mission and, at the same time, the best recommendation from our satised customers.

As a specialist for pipeline systems we offer a unique breadth and depth of products for all of the usual connection techniques and applications from a one stop shop. Tried and tested installation techniques are as much a part of our program as practice-oriented innovations.

And that's why: SANHA. Always a perfect fit.

Your advantages:

1. **Always a perfect fit**
   Our customers are central to all our activities. As a family enterprise, SANHA highly values an active close and long term relationship with all our partners, from designers, installers, contractors and trading companies. With over fifty years of service, we are committed to close support of our customers, with a highly experience local and international technical service.
2. **Large product range**
   SANHA offers a wide material, product and dimension range, multiple connection methods, with signicant expertise and experience – all from a one stop shop. SANHA, the pipeline specialist.
3. **Guaranteed safety**
   SANHA has all the important approvals, certications and warranties, backed up by WRAS and BSI, ensuring you are always on the safe side.
4. **Nationwide technical service**
   SANHA is pleased to offer a wide range of services from installation training, technical seminars, design advice, specications and on site support as and when required.

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