aquatherm

aquatherm green pipe aquatherm blue pipe aquatherm lilac pipe

WARRANTY & LIFE TIME STATEMENT

All aquatherm pipes and fittings are in accordance with German DIN 2000 confirming a calculated service life of 50 years in accordance with the permissible working pressure / temperature of their technical product manuals.

Product Liability

As a statement to aquatherm quality standards the aquatherm pipe system carries a 10 year guarantee for pipe and fittings with a product liability of €20 million per damage event.

Aquatherm GmbH guarantee is conditional on:

1. The fusion and joining of pipe and fittings using only aquatherm pipes, fittings, proprietary clips, welding tools and devices.
2. The installation of pipe and fittings is only performed by certified aquatherm installers and adherence to aquatherm technical rules and guidelines for correct installation principles as contained in the relevant aquatherm Technical Catalogue (Brochure 10101 Edition 03/2015).
3. The aquatherm pipes and fittings only being exposed to pressures, water velocities, temperatures and/or any other relevant operating parameters within the permissible parameters specified in the aquatherm Technical Catalogue (Brochure 10101 Edition 03/2015). Aquatherm is only responsible for supplying pipes and fittings and is not in any way responsible for any matter which may affect operating parameters such as the design, installation or maintenance of any system in which the pipes and fittings may be present.
4. The aquatherm warranty does not apply to mixed PP-R systems.

Limits of Liability

For bodily injury	20.000.000 Euro
For property damage	20.000.000 Euro

Aquatherm Australia Pty Ltd P.O. Box 785, Revesby (NSW) 2212. Phone: 02 9774 1172, Fax 02 9774 3619

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Please complete all information and fax to 02 9774 3619 or aquatherm@aquatherm.com.au

Installation Information

Street	
Suburb	
City	
Type of Installation	
Date of Completion	

Installers Information

Company	
Installers Name	
aquatherm's Installers Certificate Number(s)	
Signature	

This warranty must be completed, signed and returned with the completed pressure test sheet immediately upon commissioning of the system.

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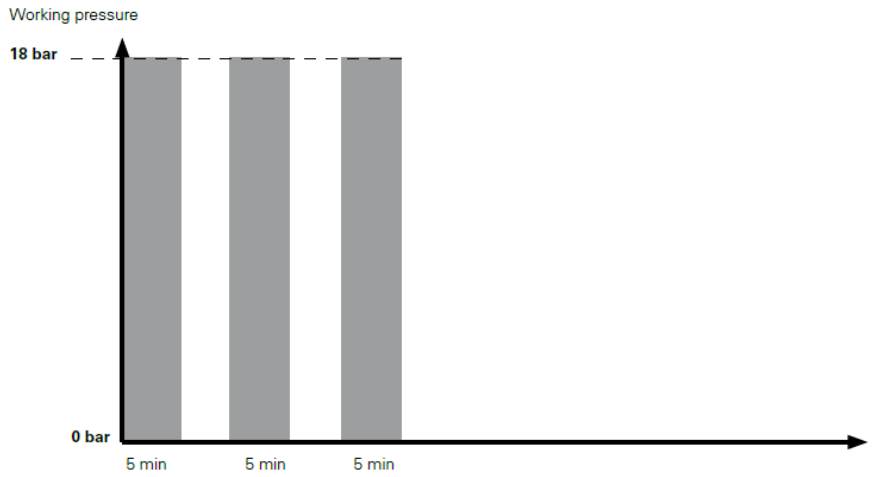
Test Record aquatherm PP-R pipe installation principles

Pressure test

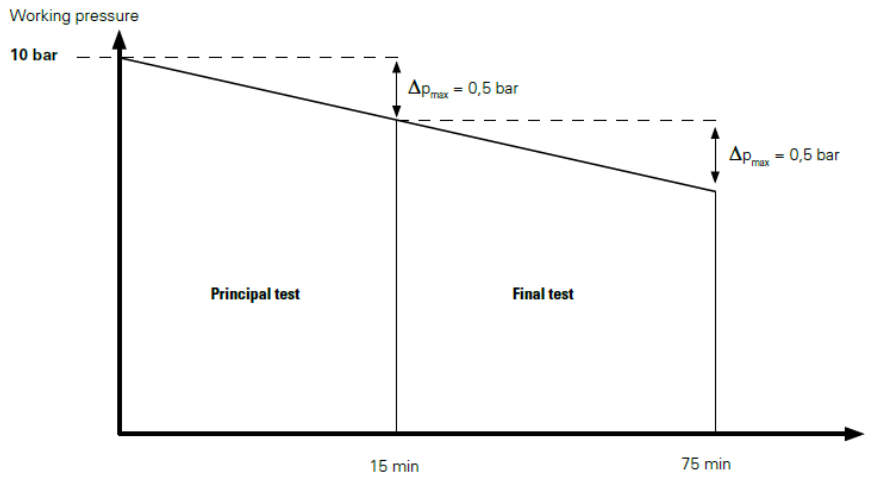
(please refer to page 81- 83 of **aquatherm green pipe** brochure 10101 Edition 04/2015).
Under AS3500 the principal and final pressure test has to be done at 1500 kPa (15 bar), not 10 bar (1000 kPa), or operation pressure x 1.5 whatever is the greater.

LEAKAGE TEST / PRESSURE DIAGRAM

PRELIMINARY TEST



PRINCIPAL- AND FINAL TEST



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TEST RECORD AQUATHERM PIPE SYSTEM INSTALLATION

Place: _____

Object: _____

Note before the test:
3 x 5 minutes system pressure of 18 bar for expansion/release of the pipes are required.

Preliminary test
The pipe system must be unpressurized between each cycle.

18 bar	5 min	realized:	yes	no
18 bar	5 min	realized:	yes	no
18 bar	5 min	realized:	yes	no

Principal test

Test pressure: _____ 10 bar

Pressure decline after 15 min: _____ bar **max. 0.5 bar**

Final test
(directly after the principal test, without changing the pressure)

Result principal test: _____ bar

Pressure decline after 60 min: _____ bar **max. 0.5 bar**

Notes: _____

Place: _____

Date: _____

_____

Stamp / Signature

Under AS3500 the principal and final pressure test has to be done at 1500 kPa (15 bar), not 10 bar (1000 kPa) or operation pressure x 1.5 whatever is the greater.

Aquatherm Warranty Statement 2016 Issue 6 August 2016

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Cautionary Note mixed (***PP-R/Copper***) hot potable water recirculation system

a) Aquatherm Australia has found out that PP-R, like any other polyolefin, can fail in the **main ring** of a mixed (***PP-R/Copper***) hot potable water recirculation system (HWRS) **(only)** due to "**Oxidative Stress Cracking**".

b) It is also now known that EPDM along with other elastomers (rubbers) such as styrene-butadiene, polybutadiene, neoprene and nitrile rubbers oxidatively degrade by crosslinking, resulting in an increase in stiffness and surface hardness leading to reduction in flexibility and elongation. This oxidative attack is due to the chemical unsaturation ("double bonds") of the elastomer, and is catalysed by the presence of transition metals, particularly copper. While vulcanization helps to decrease this effect and ant-oxidants are included in the EPDM formulations, only a few percent oxidation is required to result in loss of the mechanical properties.
(Extract from report d.d. 9th December 2015 Prof.Graeme George AM,
Professor Emeritus of Polymer Science, Queensland University of Technology)

c) Early April 2014 **The International Copper Association Australia (ICAA), formerly known as CDA Australia,** released its new "Hydraulic Services E-Design Guide and Pipe Sizing for Plumbing". Pleasingly the guide acknowledges in table 17.1 (Recommended Water Velocities for Cold and Heated Water Supplies) that water velocities, in hot potable water reticulation systems, are not covered / "Not Specified" under the AS3500.4:2003.
Their recommended design velocity for Heated water-Flow and Return-**circulating system** should be **1.0 m/s**.
This is in response to commercial Hot potable Water Recirculation Systems (HWRS) being mistakenly designed under the 3.0 m/s limitation for **non**-recirculation hot potable water systems (cottage), as per AS3500.4:2003 (clause 4.14.1).

Even the velocity for Heated water-**Non-circulatory** systems has been reduced to **2.0 m/s** down from the max. 3.0 m/s as per AS3500.4:2003.

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AQUATHERM AUSTRALIA PTY LTD CAUTIONARY NOTE

(FOR HOT POTABLE WATER RECIRCULATION (HWRS) APPLICATIONS ONLY)

1. Constant hot potable water temperatures should not exceed 70^0C.
   Temperatures above 70°C will shorten the service life of PP-R.

2. As Australia, under AS3500.4:2003, presently has no coverage for constant hot potable water reticulation systems, care should be exercised in mixed PP-R/Copper hot potable water recirculation systems where temperatures/pressures may exceed 70^0C (permissible working pressures see page 23 of **aquatherm green pipe** brochure Edition 04/2015) and where copper pipe velocities may exceed established international copper design practice – enquirers should refer to the projects Hydraulic Consultant.

   In the mixed PP-R/copper hot potable water recirculation pipe system (HWRS) (**only**) bring the hot water velocity in the **copper pipe system** down to **0.7 m/s** (absolute max. **0.9 m/s)** to avoid excessive copper (erosion-) corrosion.

3. Upstream use of copper pipe in PP-R hot potable water recirculation systems where the above operational parameters are exceeded should be avoided.
   Better it would be to replace all copper by another metal, such as Stainless Steel.

4. When the velocity in the hot potable water generation plants can't be held under the 0.7 m/s (max. 0.9 m/s) Aquatherm recommends a stainless steel heat exchanger between the PP-R and the upstream copper pipework.

5. Keep the working pressure in the whole system under 800 kPa (with temperatures not to exceed 70°C)
   Please set the safety pressure valves at 800 kPa.

6. The service life of aquatherm PP-R pipe systems could be reduced by using excessive concentration of disinfecting products (for example chlorine).
   (the use of Chlorine dioxide (ClO_2) should not be used in our PP-R system)

7. Use the original aquatherm pipe clips with (green) rubber layer and install at intervals as prescript on page 77-78 of **aquatherm green pipe** 10101 Edition 04/2015.

8. Install proper expansion facilities (expansion loops and/or bending sides) in the horizontal pipes (de-stress the PP-R system).
   (See **aquatherm green pipe** 10101 Edition 04/2015 page 68 -76) and
   aquatherm training manual version 2 edition 12/12 (page 27-32).

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Installers / Builders Declaration

Company (Installer)	
Name(s)	
Company (Builder)	
Name(s)	
I declare that I have installed the above product in accordance with aquatherm specifications and guidelines with	
no brand mixing and the design / permissible working parameters specified by the hydraulic/mechanical consultant.	
Signature Plumbing Contract Manager	
Signature Building Supervisor / Manager	

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