kiwa
Partner for progress

Test Report

Client

Hauff-Technik GmbH & Co. KG
Giengener Straße 35
89428 Syrgenstein - Landshausen

Order No.:

A 9039 / 2013

Order dated	:	May 15th, 2013
Order	:	Test of the water-tightness of a concreted in coated liner pipe ZVR DN 100 with annulus gasket HRD 100
Sample delivered by	:	Hauff-Technik GmbH & Co. KG
Sample delivered on	:	May 13th, 2013
Test period	:	May 14th - 17th, 2013

Augsburg, September 23th 2013
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M.-Eng. Holger Dietrich
- Department Manager -

Kiwa MPA Bautest

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Dipl.-Ing. (FH) Kerstin Clute
- Person Responsible -

The test report contains of 9 pages.
It may only be published unabridged.
The test results relate only on the items tested. The test material is dissipated.
Opinions and interpretations of the test body are marked in *italics* in accordance with EN ISO / IEC 17 025 clause 5.10.5.

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1 General

Kiwa MPA Bautest GmbH received an order from Hauff-Technik GmbH & Co. KG to perform a water leak test on a concreted-in coated liner pipe ZVR DN 100 with annulus gasket HRD 100.

To this end, Hauff-Technik GmbH & Co. KG delivered a ready-assembled test setup with a concreted-in coated liner pipe ZVR DN 100 with annulus seal HRD 100 to our laboratory in Augsburg (see Figure 1). The test bell was secured by the client using square steel sections.

Figure 1: Test setup

2 Test

2.1 Test preparation (Hauff-Technik GmbH & Co. KG)

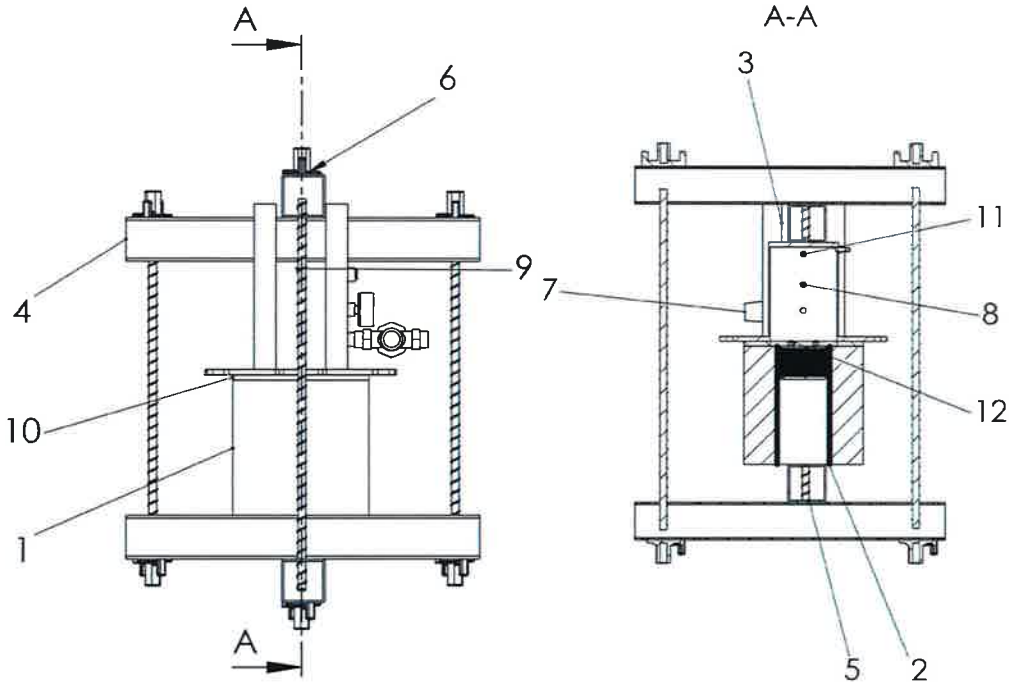
According to the manufacturer, the test setup, as described in the following, was assembled by the manufacturer.

A coated liner pipe ZVR DN 100 was concreted in a test block with edge lengths LxWxH 250x250x250 mm. Following a curing period of 28 days an annulus gasket HRD 100 was installed in the liner pipe. A pressure bell with an EPDM gasket was used to apply the water pressure and was positioned on the pipe and secured on the frame under the test block by means of square sections (see Figure 1). A pressure reducer and a pressure gauge with measurement range 0 to 10 bar were then mounted on the pressure bell.

2.2 Test implementation (Kiwa MPA Bautest GmbH)

The test body delivered by Hauff-Technik GmbH & Co. KG is a test setup assembled by the manufacturer according to 2.1 with pre-installed pressure gauge and pressure reducer (see Figure 2 to Figure 5). Kiwa MPA Bautest GmbH did not calibrate the pressure gauge delivered in the test setup.

Following consultation with the client a pressure leak test was carried out on the water-filled pressure bell for 72 hours with a permanently connected nominal pressure of 5 bar at room temperature.



Item	Number	Designation
12	1	HRD 100-2-0
11	1	Sealing screw
10	1	Rubber seal
9	1	Bleed valve
8	1	Pressure gauge
7	1	Pressure reducing regulator
6	8	Spindle rodnut
5	4	Forwork ties
4	4	Square steel
3	1	Pressure cap
2	1	Coated pipe
1	1	Tochstone

Figure 2: Test setup - manufacturer's drawing

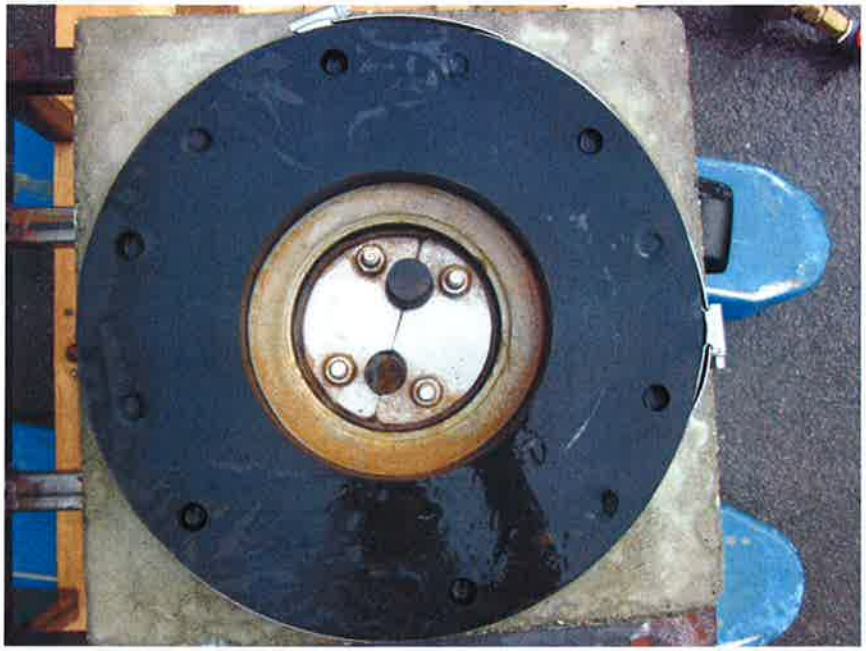


Figure 3: View - top of the test setup (after removing the test pressure bell)

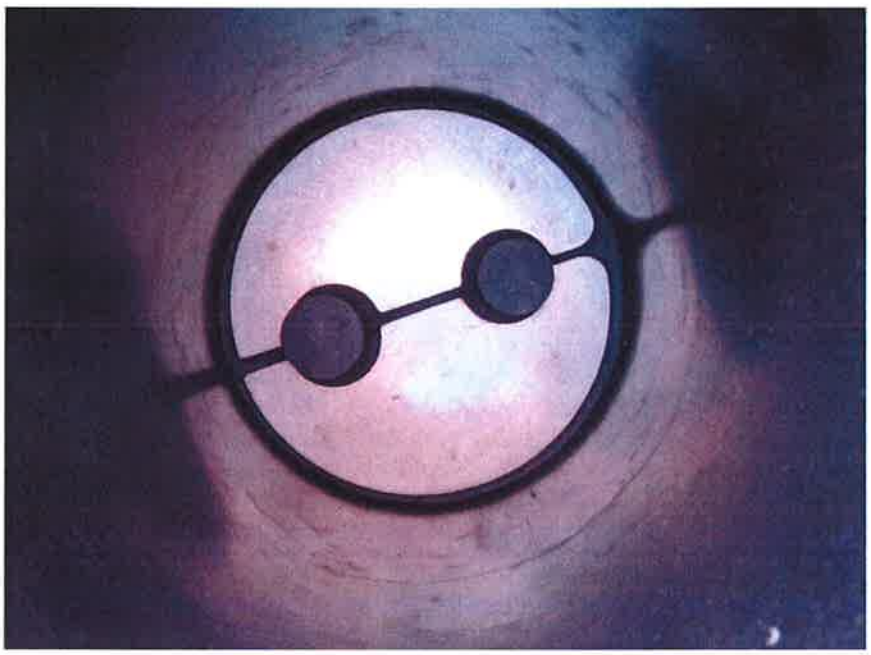


Figure 4: View - underside of the test setup; Liner pipe ZVR DN 100 with annulus gasket HRD 100 and filler plug

Figure 5: View - top of the test setup; concreted-in coated liner pipe ZVR DN 100

3 Test results

The following Figure 6 shows the pressure gauge readings at the start and end of the pressure leak test.

Figure 6: Pressure leak test with the water-filled pressure bell at room temperature (top: Pressure gauge reading at start of the test on 05/14/2013 at 08:00; bottom: Pressure gauge reading following the end of the test on 05/17/2013 at 08:00)

4 Summary

The pressure leak test of the coated liner pipe ZVR DN 100 with annulus gasket HRD 100 and with the water-filled pressure bell performed with a permanently connected nominal water pressure of 5 bar for a test period of 72 hours did not find any leaks in the system in the form of leaking water.

Augsburg, September 23th 2013