Test Report no. A1942032-05 (eng)

Kiwa GmbH
Bautest Augsburg
Finkenweg 7
86368 Gersthofen

T: +49 (0) 821 72024 - 0
F: +49 (0) 821 72024 - 40
E: Infokiwaaugsburg@kiwa.de

www.kiwa.de

Kiwa GmbH, Finkenweg 7, 86368 Gersthofen

Hauff-Technik GmbH & Co. KG
Robert-Bosch-Straße 9
89428 Hermaringen

Project / Plant:	Water tightness test of the earthing wall collar Hauff HMK 30 x 3,5 and Hauff HMK Ø 8 – 10
Order date:	11 June 2019
Product description:	Earthing wall collar Hauff HMK 30 x 3,5 and Hauff HMK Ø 8 – 10 in a waterproof concrete test block
Order:	Water tightness test ≥ 2,0 bar for 28 days, ≥ 3,0 bar for 1 day, ≥ 4,0 bar for 1 day and ≥ 5,0 bar for 8 days
Number of samples / tests:	4 tests
Sampling:	on: - / by: Applicant
Date of delivery:	12 June 2019
Testing period:	17 June - 8 August 2019
Contact:	B. Eng. David Röck Tel. +49 821 72024-14
Remark:	Translation of Test Report A1942032-05, 8 August 2019

Gersthofen, 8 August 2019
dö/rö

p. p.

B. Eng. David Röck
- Project manager -

Kiwa GmbH
kiwa

p. p.

Jörg Bölzle
- Project manager -

Geschäftsführer: Prof. Dr. Roland Hüttl
Amtsgericht Hamburg, HRB 130568, St.Nr.: 46/736/03268

CONTENTS

1. General

Kiwa GmbH, Bautest Augsburg, was contracted by Hauff-Technik GmbH & Co. KG to test the water tightness of the earthing wall collar Hauff HMK 30 x 3,5 and Hauff HMK Ø 8 – 10 [1] embedded in a waterproof concrete test block.

Therefore a concrete test block with embedded earthing wall collar Hauff HMK 30 x 3,5 (see Figure 1 - left) and Hauff HMK Ø 8 – 10 (see Figure 1 - right) as well as the necessary components for the test was delivered by Hauff-Technik GmbH & Co. KG to our test laboratory in Gersthofen, Germany. The concrete test block was produced by RAU-Betonfertigteile GmbH & Co. KG. The assembly of the test setup was performed by an employee of Hauff-Technik GmbH & Co. KG (see Figure 2).

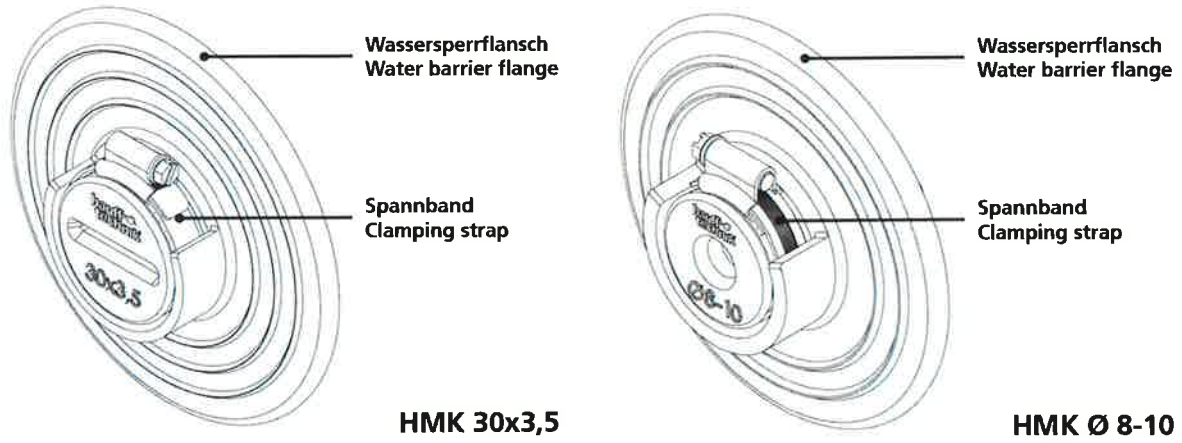


Figure 1. Earthing wall collar Hauff HMK 30 x 3,5 and Hauff HMK Ø 8 – 10 - manufacturer`s drawing.

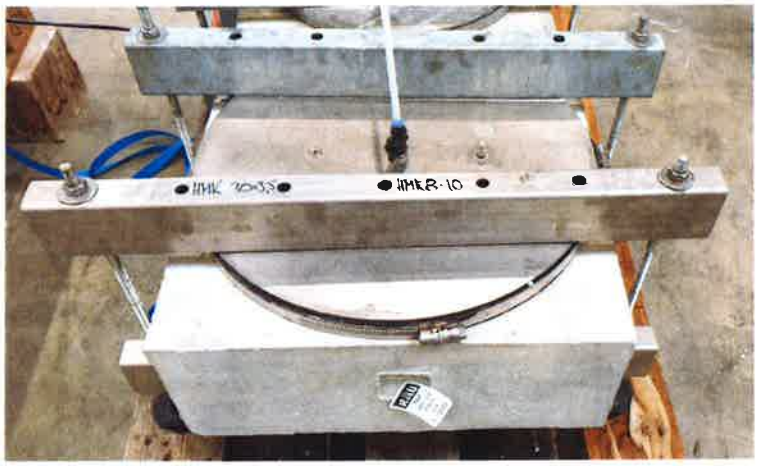


Figure 2. Test setup – complete system.

2. References

[1] Hauff-Technik GmbH & Co. KG - „Assembly instruktion Hauff earting wall collar" ma_hmk_8-10_30x3,5_a3_190611. Rev.: 00/2019-06-11.

[2] WIKA Polska sp. z o.o. sp. k. - "Inspection certificate according to EN 10204 - 3.1. Order No. 22666960/2.

[3] WIKA Polska sp. z o.o. sp. k. - "Inspection certificate according to EN 10204 - 3.1. Order No. 22666960/3.

3. Test procedure

3.1 Test preparation (Hauff Technik GmbH & Co. KG)

According to information given by the manufacturer the test setup was assembled by Hauff-Technik GmbH & Co. KG as follows:

A flat steel 30 mm x 3,5 mm x 200 mm was installed in the earthing wall collar Hauff HMK 30 x 3,5 and a round steel Ø 10 mm x 200 mm was installed in the earthing wall collar Hauff HMK Ø 8 – 10. Subsequently, the prepared earthing wall collars were positioned and fixed in the timber formwork. After closing the formwork, the earthing wall collars were cast in layers and the concrete was compacted until the ends of the flat steel and round steel protruded a few millimeters out of the concrete test block on the bottom and upper side. The waterproof concrete test block was cured under water for 28 days.

Finally, a steel plate with pressure reducer and calibrated manometer (see Chapter 6) was placed above the embedded earthing wall collars (see Figure 3). The sealing of the steel plate was performed with help of an EPDM sealing and clamping pressure.

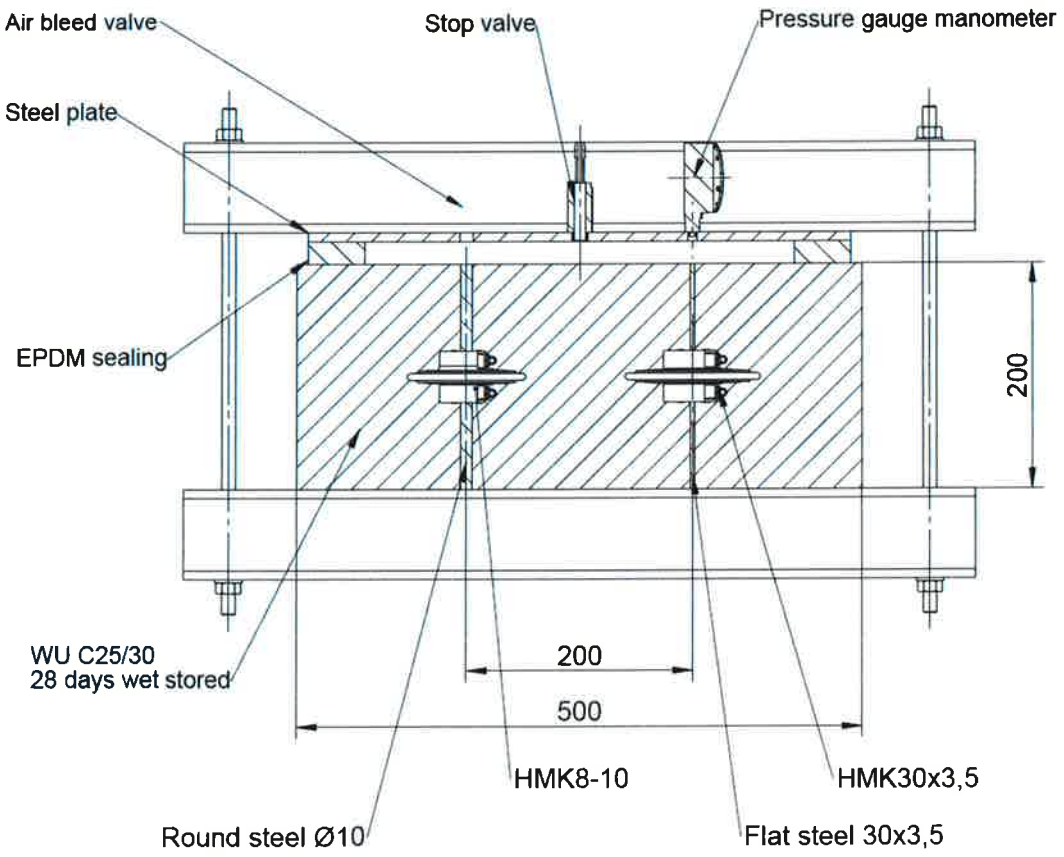


Figure 3. Details of the test setup - manufacturer`s drawing.

3.2 Water tighness test (Kiwa GmbH)

The test setup assembled by Hauff-Technik GmbH & Co. KG was built up in accordance to Chapter 3.1 with one manometer (see Figure 3).
A calibration of the assembled manometer (serial no. 5400TD8M [2] and 5400TD8B [3]) was performed by WIKA Polska sp. z o.o. sp. k. (see Chapter 6).

After prior consultation with the manufacturer the test of the water tightness with permanently attached water or air-water pressure was performed as follows:

≥ 2,0 bar for 28 days (water-filled pressure vessel)
≥ 3,0 bar for 1 day (water-filled pressure vessel)
≥ 4,0 bar for 1 day (water-filled pressure vessel)
≥ 5,0 bar for 8 days (air-water-filled pressure vessel).

4. Test results

During the water tightness tests no leakages were detected at the system (see Table 1).

Table 1. Results of the water tightness tests.

Test specimen	Water pressure at the beginning of testing [bar]	Water pressure at the end of testing [bar]	Testing period [d]	Remark
Earthing wall collar Hauff HMK 30 x 3,5 and Hauff HMK Ø 8 – 10	≥ 2,0	≥ 2,0	28	No leakages were detected at the system
	≥ 3,0	≥ 3,0	1	
	≥ 4,0	≥ 4,0	1	
	≥ 5,0	≥ 5,0	8	

5. Summary

During the water tightness test of the earthing wall collar Hauff HMK 30 x 3,5 and Hauff HMK Ø 8 – 10, embedded in a waterproofed concrete test block, no leakages of the system were detected at ≥ 2,0 bar for 28 days, ≥ 3,0 bar for 1 day, ≥ 4,0 bar for 1 day and ≥ 5,0 bar for 8 days.

6. Calibration certificate

Wika Polska sp. z o.o. sp. k.

Inspection certificate according to EN 10204 - 3.1
Abnahmeprüfzeugnis nach EN 10204 - 3.1

				Page / Seite	1 / 2
Customer / Kunde	Hauff-Technik GmbH & Co. KG Robert-Bosch-Straße 9 Hermaringen 89568 DE			Certificate No / Zeugnis-Nr	WC006949
				Date / Datum	19.03.2018
Customer Order No / Kundenbestellnummer	175211375	Customer Part No / Kunden Artikel-Nr		Order Date / Bestelldatum	
Order No / Item / Auftrags-Nr / Pos	229669960/2 32210713	Part No / Artikel-Nr	14225185		
Model / Typ	111.10.063	Serial number / Sernernummer	5400TD8M	Scale range / Anzeigebereich	0 ... 2,5 bar rel
Class / Klasse	2,50 %	Tag No / Messstellen-Nr			
Reference / Referenzgerät CPG2500 0,01% 1 ... 2,7 bar rel				Calibration No / Kalibriernummer SW-102-1-17 WPL 17-04	
Article text / Artikeltext	Bourdon tube pressure gauges,model 111				

Wika Polska sp. z o.o. sp. k.
ul. Legnicka 29/33
67-800 Wloclawek
Polska

Tel. +48 54 23-01-100
Fax +48 54 23-01-101
info@wikapolska.pl
www.wikapolska.pl

Wika Polska sp. z o.o. sp. k.

Inspection certificate according to EN 10204 - 3.1
Abnahmeprüfzeugnis nach EN 10204 - 3.1

Page / Seite: 2 / 2

Customer / Kunde:
Hauff Technik GmbH & Co. KG
Robert-Bosch-Straße 9
Hermaringen
89568
DE

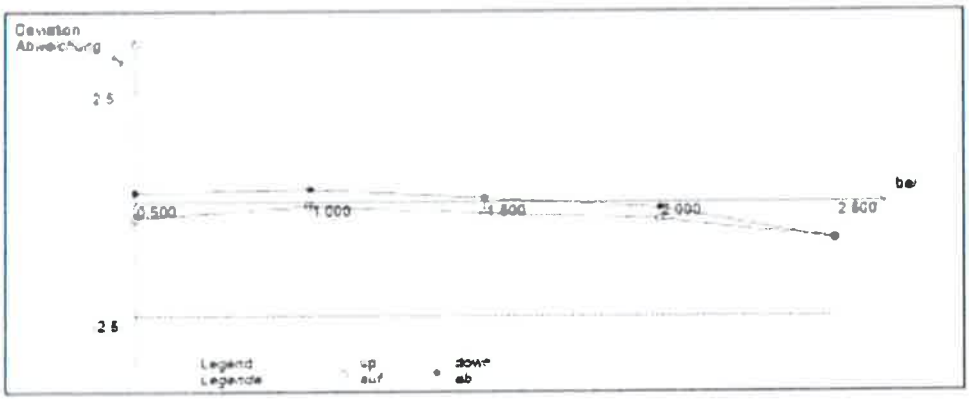
Certificate No / Zeugnis-Nr: WC006949

Date / Datum: 19.03.2019

Result / Ergebnis

Temperature / Temperatur: 20°C +/- 5 K

Test item / Prüfling bar	Standard / Normal bar		Measured value / Messwert bar	no. Deviation / Abweichung bar	Deviation / Abweichung %	Hysteresis / Hysterese %
0.500	0.500	0.494	0.502	0.002	-0.06	-0.58
1.000	1.002	0.993	0.997	0.003	0.10	-0.38
1.500	1.506	1.498	1.502	-0.002	-0.07	-0.34
2.000	2.009	2.003	2.006	0.006	0.24	0.26
2.500	2.520	2.520	2.520	-0.020	-0.81	0.00



Object keeps the specification
Der Kalibriergegenstand hält die Fehlergrenzen nach Herstellerangaben ein

Calibration was carried out according to the following norm: DIN EN 837-1
Die Kalibrierung erfolgte auf der Grundlage der folgenden Norm

Remarks / Bemerkung

Inspection Representative / Abnahmebeauftragte: Daniel Kotlewski

Examiner / Prüfer: S. Piekarski

This document was created automatically and needs no signature
Dieses Dokument wurde automatisch erstellt und ist ohne Unterschrift

Wika Polska sp. z o.o. sp. k.
ul. Legnicka 29/35
87-800 Włocławek
Polska

Tel. +48 54 23 01 100
Fax +48 54 23-01-101
info@wikapolska.pl
www.wikapolska.pl

QMF P A 101 b/R 0

Wika Polska sp. z o.o. sp. k.

Inspection certificate according to EN 10204 - 3.1
Abnahmeprüfzeugnis nach EN 10204 - 3.1

Customer / Kunde	Hauff-Technik GmbH & Co. KG Robert-Bosch-Straße 9 Hermaringen 89568 DE			Certificate No / Zeugnis-Nr	WC006960
				Date / Datum	2018-03-20
Customer Order No / Kundenbestellnummer	175211375	Customer Part No / Kunden Artikel-Nr		Order Date / Bestelldatum	
Order No / Item / Auftrags-Nr / Pos	226669603 / 32210715	Part No / Artikel-Nr	14225187		
Model / Typ	111.10.063	Serial number / Seriennummer	5400TD88	Scale range / Anzeigebereich	0 6 bar rel
Class / Klasse	2,50 %	Tag No / Messstellen-Nr			
Reference / Referenzgerät				Calibration No / Kalibriernummer	
CPG2500 0.01% IS-50 -1 32.1 bar rel				SW-101-1-17 WPL 17-04	
Article text / Artikeltext	Bourdon tube pressure gauges,model 111				

Wika Polska sp. z o.o. sp. k.
ul. Legska 29/35
87-800 Włocławek
Polska

Tel. +48 54 23 01 100
Fax +48 54 23 01 101
info@wikapolska.pl
www.wikapolska.pl

Wika Polska sp. z o.o. sp. k.

Inspection certificate according to EN 10204 - 3.1
Abnahmeprüfzeugnis nach EN 10204 - 3.1

Customer / Kunde
Hauff Technik GmbH & Co. KG
Robert-Bosch-Straße 9
Hermaringen
89568
DE

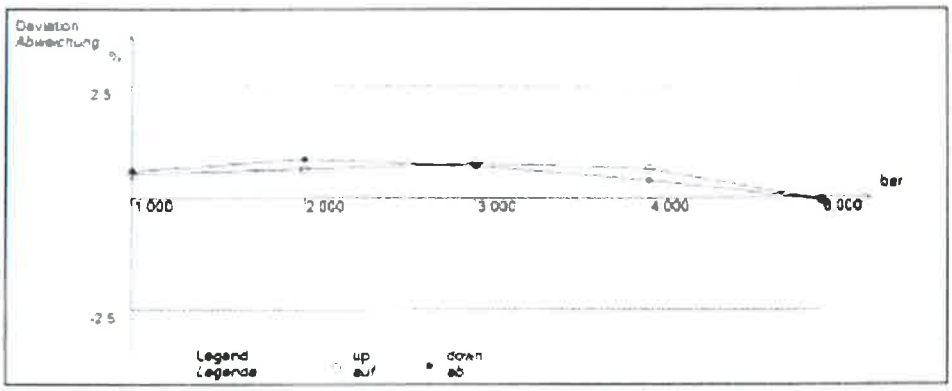
Certificate No / Zeugnis Nr: WC006950

Date / Datum: 2018-03-20

Result / Ergebnis

Temperature / Temperatur: 20°C +/- 5 K

Test item / Prüfling bar	Standard / Referenz bar		Measured value / Messwert bar	Deviation / Abweichung bar	Deviation / Abweichung %	Hysteresis / Hysterese %
1.000	0.969	0.964	0.967	0.033	0.55	-0.08
2.000	1.961	1.948	1.955	0.045	0.75	-0.22
3.000	2.954	2.947	2.956	0.044	0.74	0.06
4.000	3.962	3.977	3.969	0.031	0.51	0.25
6.000	6.002	6.002	6.002	0.002	0.04	0.00



Object keeps the specification
Der Kalibriergegenstand hält die Fehlergrenzen nach Herstellerangaben ein

Calibration was carried out according to the following norm
Die Kalibrierung erfolgte auf der Grundlage der folgenden Norm: DIN EN 837-1

Remarks / Bemerkung

Inspection Representative / Abnahmebeauftragter: i.V. Daniel Kotlewski

Examiner / Prüfer: J. Glodowski

This document was created automatically and needs no signature
Dieses Dokument wurde automatisch erstellt und gilt ohne Unterschrift

Wika Polska sp. z o.o. sp. k.
ul. Łęczka 29/35
87-800 Włocławek
Polska

Tel. +48 54 23 01 100
Fax +48 54 23 01 101
info@wikapolska.pl
www.wikapolska.pl

Gersthofen, 8 August 2019