

Test Report

No. 2009-B-3944

1st Issue

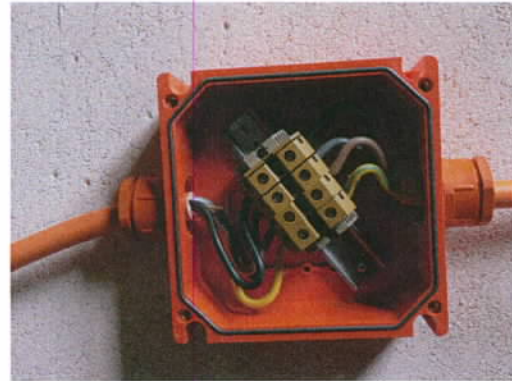
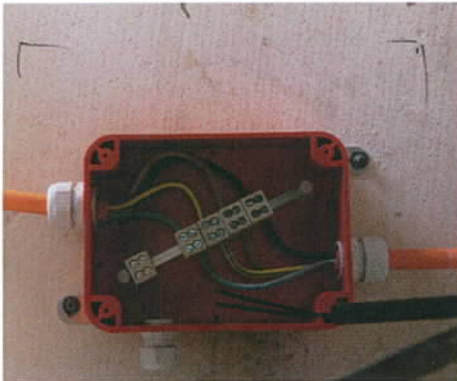
Client: Günther Spelsberg GmbH & Co. KG
Im Gewerbepark 1
D-58579 Schalksmühle

Order of: 2009-09-22

Incoming date: 2009-09-23

Content of order: Execution of a fire test according to DIN EN 12101-3: 2002 with flaming about 120 minutes (400 °C) for determination of the function period of a junction box

Test samples: WKE 54; WKE 400 RK



Test result: WKE54 fulfils F400
WKE 400 RK fulfils F400

Delivery date: 2009-09-14

Sampling: MPA Dresden GmbH wasn't involved in any selection or sampling procedure.

This test report contains 4 pages of text and 5 pages of enclosure.



Publications of test reports, also in the form of extracts and references to tests for advertising need in every case the written agreement of the test institute. Every page of these test report is stamped with the official seal of the test institute.

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1 Preface

The Günther Spelsberg GmbH & Co. KG in Schalksmühle assigned the MPA Dresden GmbH with the execution of a fire test according to DIN EN 12101-3: 2002 with flaming about 120 minutes (400 °C) for determination of the function period of a junction box.

2 Description of the test samples

2.1 Description of the junction box WKE 54

The WKE 54 junction box consists of a bottom part and a top cover. Milled-out portion for supporting of cable fittings are situated in the side walls. The terminal box has blocks of terminals, consisting of special ceramic double terminals 16 mm² and D01-fuse socket on bearing rail.

The terminal box was mounted through outside fixing clips on the wall.

Marking: WKE 54

Dimensions: length × width × height = 256 mm × 171 mm × 106 mm

Abstract: relay box with function E90 using as a junction box with fused branch pipe

Test accreditation VDE:

Protection class: IP 67 according to EN 60670 VDE

Glowing hot-wire test: 960 °C according to DIN VDE 0471 EN 60695
UL 94-V0

Nominal voltage: U_i = 690 V according to DIN IEC 60998-2-5 VDE

Materials:

Material box: special thermosetting plastics halogen-free

Colour: orange similar RAL 2004

Material terminals: terminal 16 mm²

Fuse socket: D0 16 A 1-pole

Fixing clips: steel V2A

2.2 Description of the junction box WKE 400 RK

The WKE 400 RK junction box consists of a bottom part and a top cover. Milled-out portion for supporting of cable fittings are situated in the side walls. The terminal box has terminals 2.5 until 35 mm² consisting of thermosetting plastic and one fuse clip (6.3 A) on bearing rail.

The terminal box was mounted through outside fixing clips on the wall.

Marking: WKE 400 RK

Dimensions: length × width × height = 200 mm × 200 mm × 110 mm

Abstract: relay box with function E30 using as a junction box with fused branch pipe



Test accreditation VDE:

Protection class:	IP 66 according to EN 60670 VDE
Nominal voltage:	$U_i = 450$ V according to DIN IEC 60998-2-5 VDE
Materials:	
Material box:	special thermosetting plastics halogen-free
Colour:	orange similar RAL 2004
Material terminals:	terminal 2.5 until 35 mm ² SAK 35N Fuse clip 1.5 until 10 mm ² SAKS 1-35 Isolation body made of thermosetting plastic
Fixing clips:	steel V2A

3 Test preparation

The junction boxes WKE 54 and WKE 400 RK were tested according to DIN EN 12101-3: 2002. The fire test was carried out on the 16th of September 2009 in the MPA Dresden GmbH.

Therefore the junction boxes were mounted in a testing furnace according to annex C of the DIN EN 12101-3: 2002 and section 5 of the ISO 834-1: 1999. The flaming was carried out with oil burners. A direct effect of the flames on the junction boxes was impossible.

The two junction boxes WKE 54 and WKE 400 RK were mounted during the fire test on a wall of aerated concrete. The cable led through on the right and left side out of the testing furnace. The feed through of the cables out of the testing furnace were closed or choked good with mineral wool.

The assessment of loss of functionality (short circuit) of the tested junction boxes was showed by checking of the phases L₁, L₂, L₃ and N with 3.15 A-micro fuses.

4 Examination of the test

The fire test was carried out according to annex C of the DIN EN 12101-3: 2002. The temperature in the testing furnace of 400 °C as start temperature was reached five minutes after switching-on of the burner. The voltage was disconnected after 15 test minutes for a period of 2 minutes according to section C.4.4 of the DIN EN 12101-3: 2002. The voltage was connected again after the 2 minutes. The disconnection and the connection of the voltage were without any problems. The period of 2 minutes, for which the voltage was disconnected, was added to the test period.

The middle increase of the temperature inside of the testing furnace is confronted to the in the section 6.1.3 of the DIN EN 12101-3: 2002 defined test temperature of 400 °C in the enclosure 3 of that test report. The adherence of the test regulations is shown.

The test sample WKE 54 was burning since the 40th test minute. Therefore the temperature inside of the testing furnace was over 425 °C. The burner operated with the smallest load and the throttle plate was open. The temperature inside of the testing furnace was normally since the 72nd test minute. The fire test was terminated after 125 minutes flaming without any short circuits or without any interruptions of the strip conductor.



5 Evaluation of the results


With the according to DIN EN 12101-3: 2002 executed fire test on the junction boxes WKE 54 and WKE 400 RK was established that the requirements for the class F400 according to DIN EN 12101-3: 2002 were fulfilled.

6 Special hints

This test report is only valid for the in section 2 described test sample.

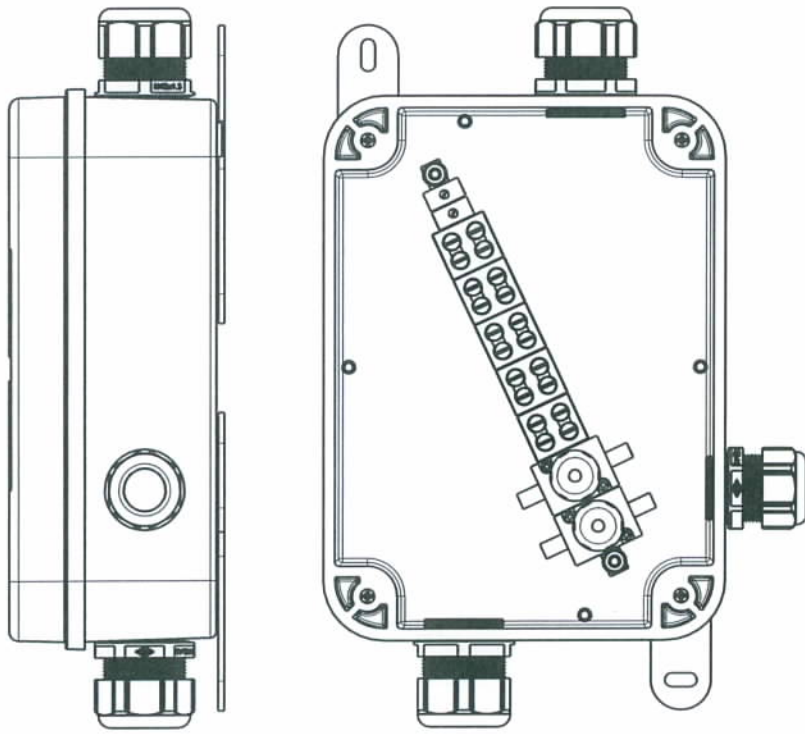
The Test Report No. 2009-B-3944 is valid indefinitely as long as the structure and the components of the test sample are not changing.

Freiberg, 2009-11-19

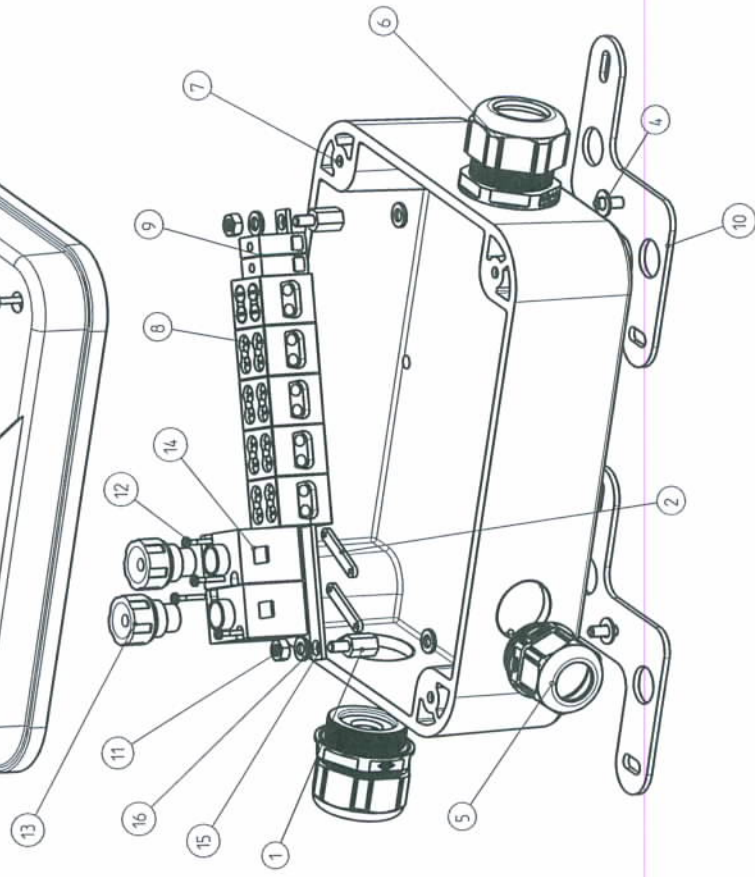

Dipl.-Ing. Hübler
Manager of Test Laboratory




Dipl. Ing. (FH) Aguirre Cano
Test Engineer



Pos	Benennung
1	Abstandbolzen
2	Befestigungslasche
3	Deckel
4	Dichtscheibe
5	Kabelverschraubung M12-M10
6	Kasten WKE 54 - gefraest
7	Klemme 2 fach 6-16mm ²
8	Klemme Weidmueller
9	Kombilasche
10	Mutter flach
11	Schraube
12	Schraubkappe
13	Sicherungssockel
14	Tragschiene
15	Untertscheibe M6



(Verwendungsbereich)	(Zul.-Abw.)	(Oberflaeche)	Maßstab	2:5	(Volumen in cm ³)	16.16.4.24
		(Werkstoff-Halbzeug)				
		(Benennung)	WKE 54 EU			
		Name	MGu			
		Datum	05.06.09			
		Bearb.	Gep.			
		Verf.	Status ***			
		spelsberg		(Zeichnungsnummer)		
		Name (Urspr.) 0		Blatt 1		
		Datum		Bl. 1		
		Zust.-Aenderung		Bl.		
		***		Bl.		

Temperatur im Brandraum

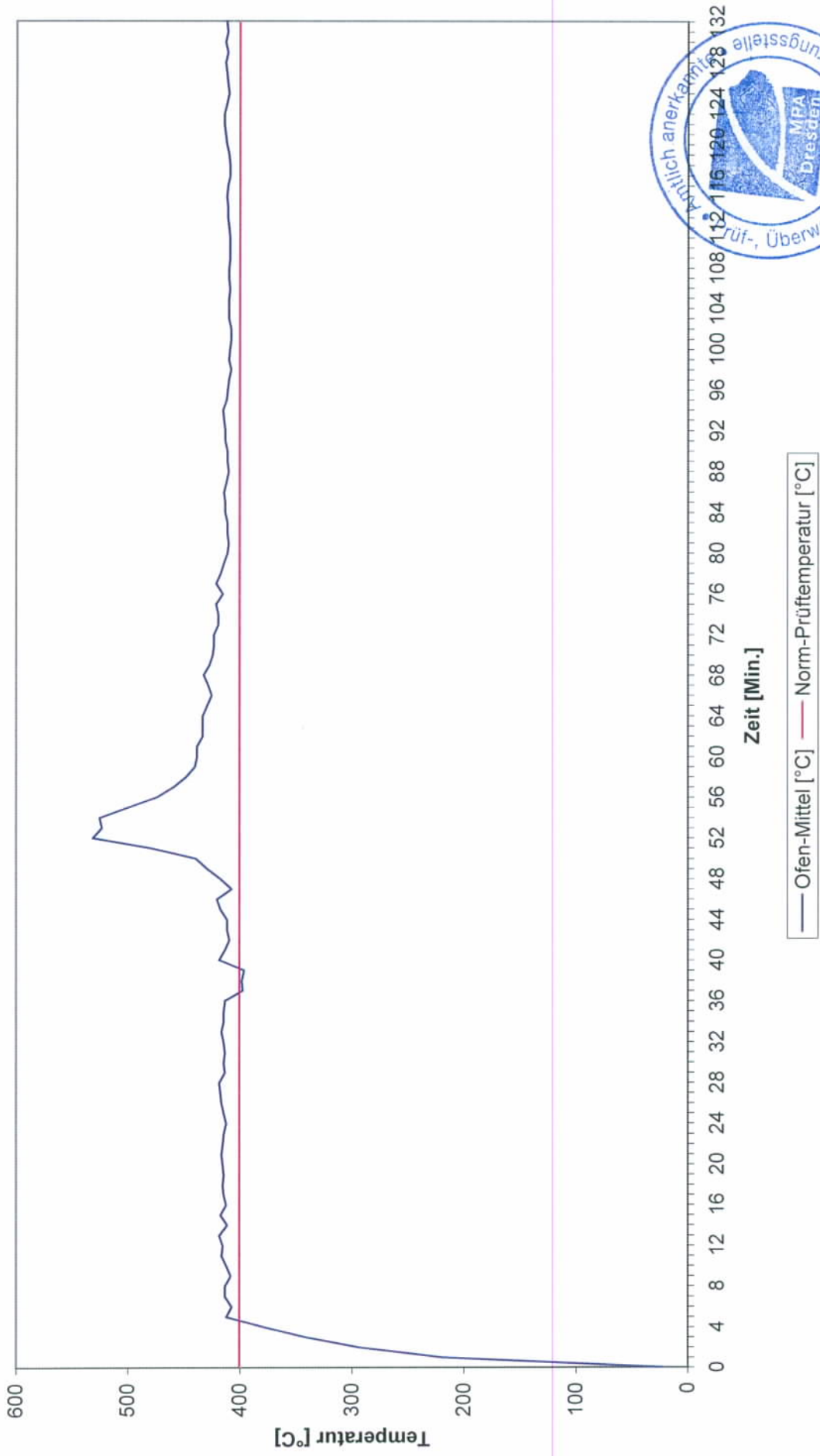


Photo 1: test sample "WKE 54" before the fire test according to DIN EN 12101-3: 2002

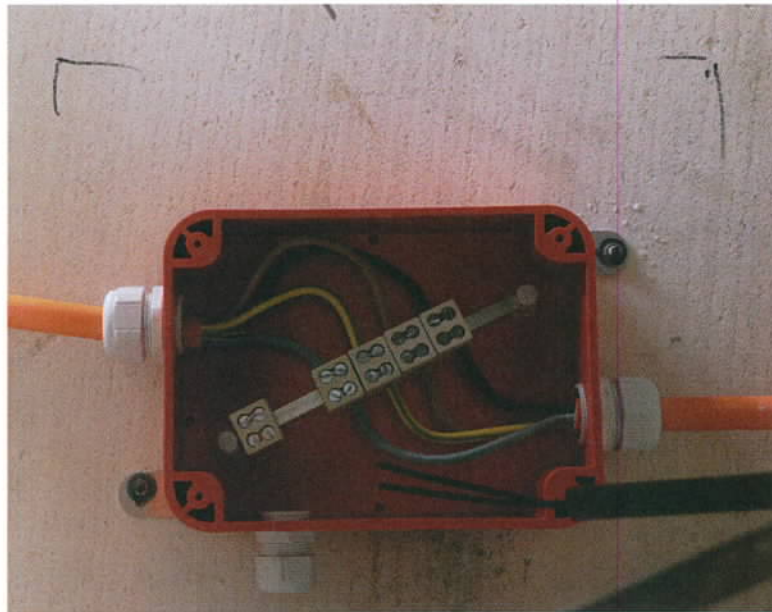


Photo 2: test sample "WKE 54" after the fire test according to DIN EN 12101-3: 2002



Photo 3: test sample "WKE 400 RK" before the fire test according to DIN EN 12101-3: 2002

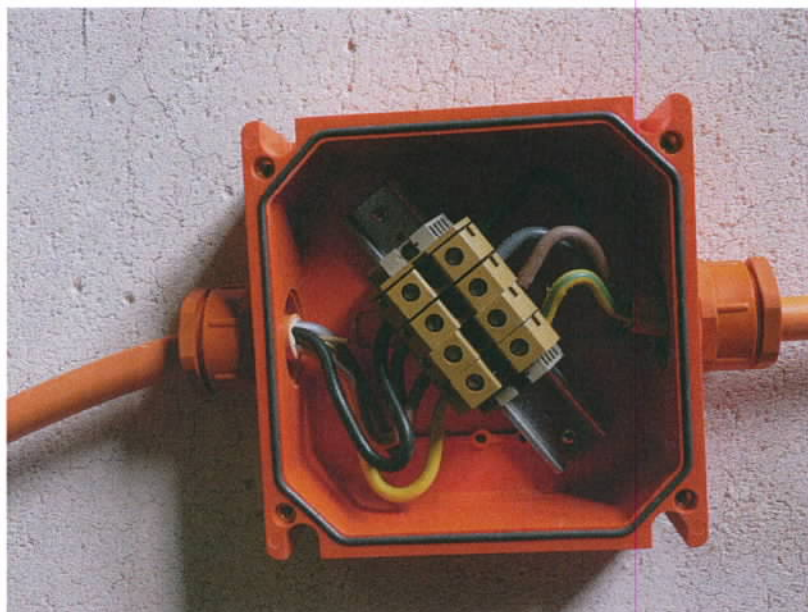


Photo 4: test sample "WKE 400 RK" after the fire test according to DIN EN 12101-3: 2002

