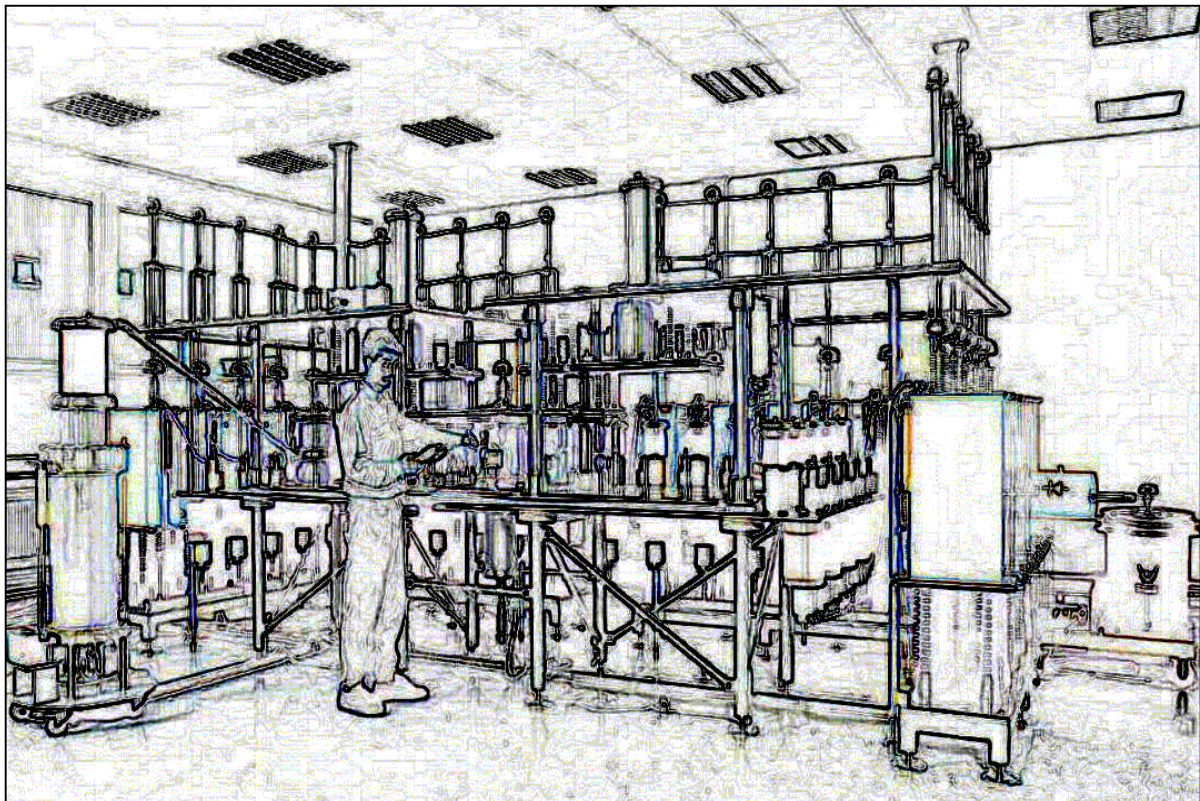


Test Report



Report no.:	BET/OBO 1-04-08-13e
Date of test:	2004-08-09
Test engineer:	Dipl.-Ing. M.Benzin
Customer:	OBO Bettermann GmbH & Co.
Device under test:	Cable trays MKS and RKS
Test requirements:	Electrical continuity of the EN 61537

1. Customer

OBO Bettermann GmbH & Co. KG
Hüingser Ring 52
58710 Menden
Germany

2. Devices under test (DUT)

<u>Test device</u>	<u>Name</u>	<u>Material</u>	<u>Order number</u>
Cable tray	MKS 630	FS	6055 303
Cable tray	RKS 630	FS	6047 653
Cover for cable trays	DRLU / 300	FS	6052 307
Universal cover clamp	DKU	V2A	6065 600
Straight connector set	RV 630	FS	6068 189
Joint plate	SSLB 300	FS	7070 217
Barrier strip	TSG 60 / S	FS	6062 288
Clamp for barrier strip	KS MKS/SKS	FS	6062 300
Clamp for barrier strip	KS RKS	FS	6062 296

Manufacturer: OBO Bettermann GmbH & Co. KG
Hüingser Ring 52
58710 Menden
Germany

3. Test requirements

Electrical continuity of the § 11.1.2 of the EN 61537 (2001)

4. Realisation of test

The test of the electrical continuity is performed as described in § 11.1.2 of the EN 61537 (2001) with 3 similar test samples. An alternating current with 25A_{0,1A} with a frequency of 50Hz of a voltage source having a maximum open circuit voltage of 10V is applied to the test setup. During the test the voltage drop is measured between 2 points as described in the following table.

Test	Test setup	Measuring points	maximum allowed impedance between the measuring points
1	Cable tray 1000mm length	500mm in length direction of the cable tray according figure 9 of the EN 61537 (2001)	5,00mΩ/m
2	Cable tray 600mm length with cover and one cover clamp DKU at the centre of each side of the cable tray	50mm both ways of the cover clamp at the cover and the cable tray	50,0mΩ
3	2 pieces cable tray 600mm length with straight connector set RV 630 without screws	50mm both ways of the straight connector at the cable tray according figure 9 of the EN 61537 (2001)	50,0mΩ
4	Cable tray 600mm length with barrier strip with 2 clamps placed with a distance of 400mm	centric between 2 clamps at the cable tray and the barrier strip	50,0mΩ
5	2 pieces cable tray 600mm length with straight connector set RV 630 without screws and barrier strip with 2 clamps each one 300mm both ways of the straight connector	centric between the straight connector and one clamp at the cable tray and the barrier strip	50,0mΩ
6	2 pieces cable tray 600mm length with straight connector set RV 630 and joint plate without screws and barrier strip with 2 clamps each one 300mm both ways of the straight connector	centric between the straight connector and one clamp at the cable tray and the barrier strip	50,0mΩ

Photos of the test setup are given in annex A.

5. Measured results

Cable tray type		MKS			RKS		
Test no.	Test sample	Current I	Measured voltage drop U	Calculated impedance $Z = U/I$	Current I	Measured voltage drop U	Calculated impedance $Z = U/I$
1	1	25,0A	5,0mV	0,40mΩ/m	25,0A	7,4mV	0,59mΩ/m
	2	25,0A	4,9mV	0,39mΩ/m	25,0A	7,4mV	0,59mΩ/m
	3	24,9A	7,2mV	0,58mΩ/m	25,0A	10,3mV	0,82mΩ/m
2	1	25,0A	2,5mV	0,10mΩ	25,0A	2,1mV	0,08mΩ
	2	25,0A	3,4mV	0,14mΩ	25,0A	3,3mV	0,13mΩ
	3	25,0A	2,9mV	0,12mΩ	25,0A	2,1mV	0,08mΩ
3	1	24,9A	6,7mV	0,27mΩ	25,0A	8,2mV	0,33mΩ
	2	24,9A	6,9mV	0,28mΩ	25,0A	9,7mV	0,39mΩ
	3	24,9A	7,2mV	0,29mΩ	25,0A	9,3mV	0,37mΩ
4	1	24,9A	11,8mV	0,47mΩ	25,0A	71,4mV	2,86mΩ
	2	25,0A	15,7mV	0,63mΩ	25,0A	57,4mV	2,30mΩ
	3	25,0A	12,4mV	0,50mΩ	24,9A	26,1mV	1,05mΩ
5	1	25,0A	6,7mV	0,27mΩ	24,9A	13,1mV	0,53mΩ
	2	24,9A	6,2mV	0,25mΩ	24,9A	6,2mV	0,25mΩ
	3	24,9A	10,5mV	0,42mΩ	24,9A	6,9mV	0,28mΩ
6	1	25,0A	5,3mV	0,21mΩ	24,9A	7,1mV	0,29mΩ
	2	25,0A	4,5mV	0,18mΩ	25,0A	4,3mV	0,17mΩ
	3	25,0A	6,3mV	0,25mΩ	25,0A	5,9mV	0,24mΩ

6. Result

The devices under test are tested as described above. All calculated impedances are below the allowed maximum value.

**The performed tests of the electrical continuity of the
§ 11.1.2 of the EN 61537 (2001) with the cable trays
MKS 630 and RKS 630 are passed.**

2004-08-13
 BET GmbH
 Fischkuhle 39
 D- 58710 Menden

Test engineer
 Dipl.-Ing. M.Benzin



Report no.: **BET/OBO 1-04-08-13e**

Date of test: 2004-08-09

Test engineer: Dipl.-Ing. M.Benzin

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Annex A

Photos

(The measuring points are marked with arrows)

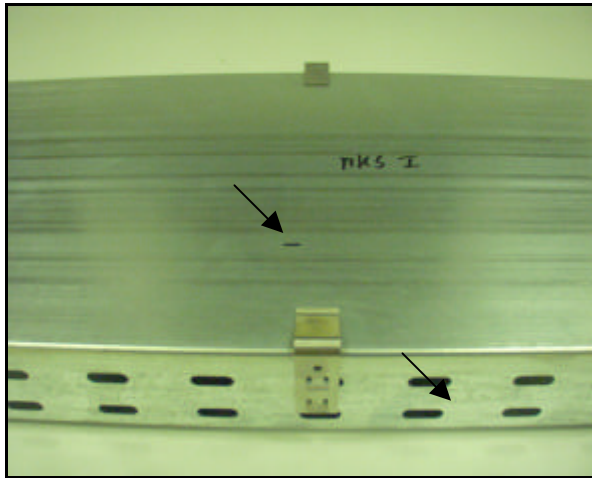


Figure 1: Test no. 2 MKS

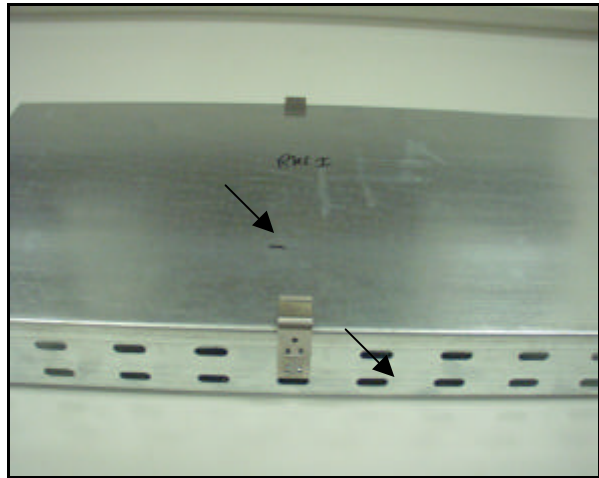


Figure 2: Test no. 2 RKS

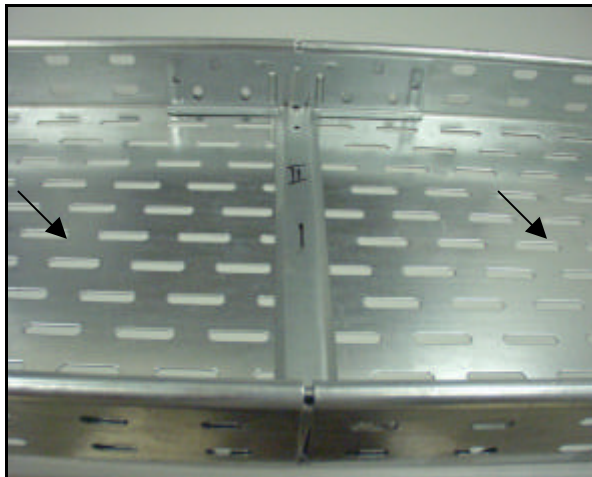


Figure 3: Test no. 3 MKS



Figure 4: Test no. 3 RKS

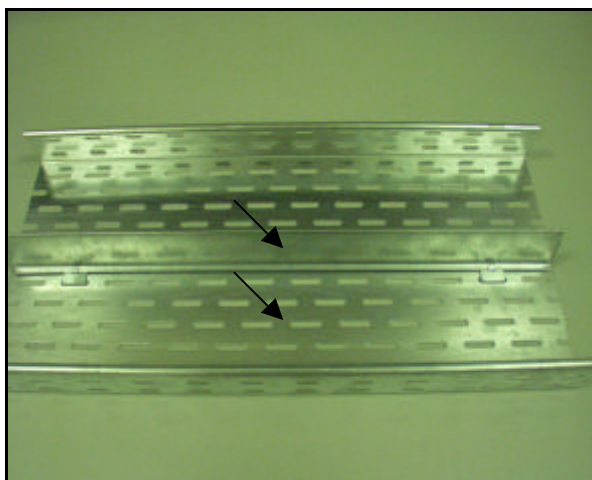


Figure 5: Test no. 4 MKS

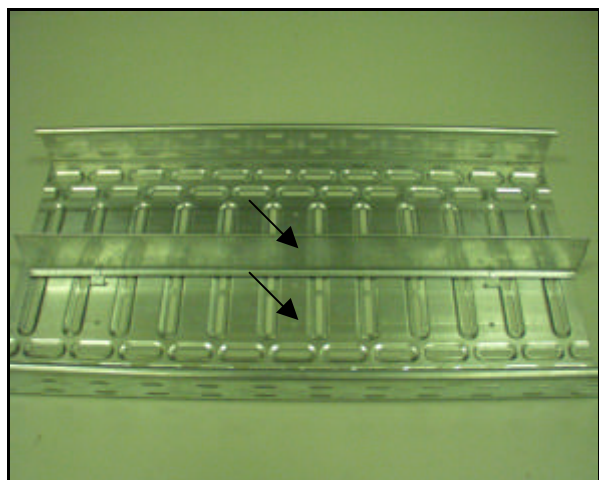


Figure 6: Test no. 4 RKS

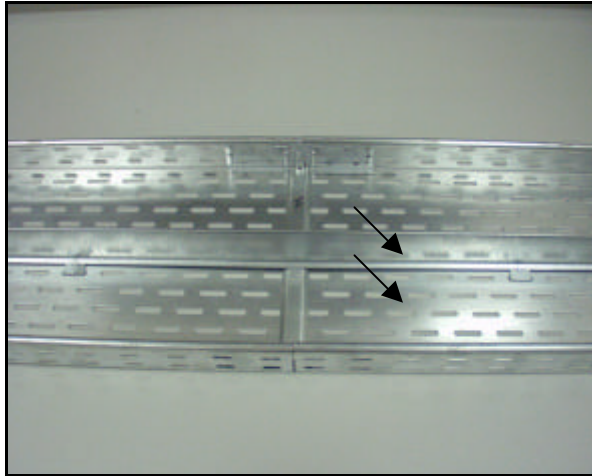


Figure 7: Test no. 5 MKS

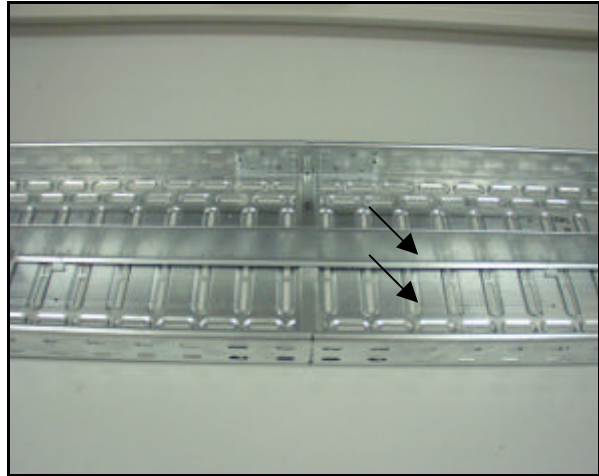


Figure 8: Test no. 5 RKS

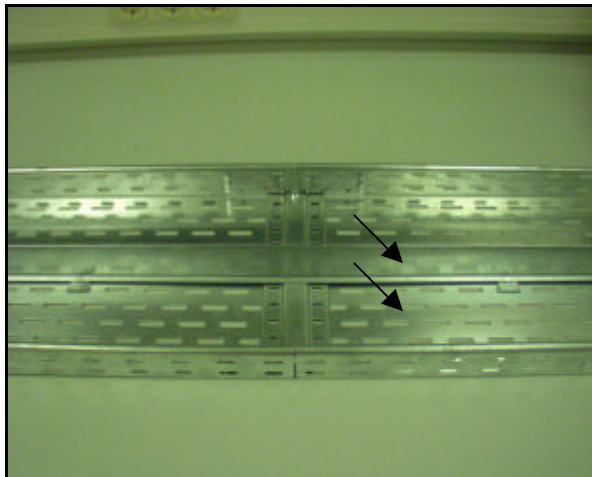


Figure 9: Test no. 6 MKS

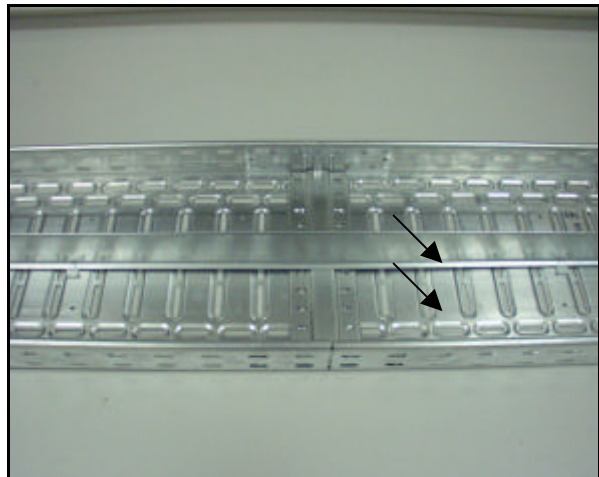


Figure 10: Test no. 6 RKS