FIRES
The Experts On Fire Safety

TEST REPORT FIRES-FR-200-11-AUNE

Cartridge fire damper PKI-C (installed within floor)

Reg. No. 041/S-159

The Experts on Fire Safety

TEST REPORT

FIRES-FR-200-11-AUNE

Tested property:	Fire resistance
Test method:	EN 1366-2: 1999
Date of issue:	14. 11. 2011
Notified body:	1396
Name of the product:	Cartridge fire damper PKI-C (installed within floor)
Manufacturer:	IMOS-Systemair, s.r.o., Kalinkovo 146, 900 43 Kalinkovo, Slovak Republic
Sponsor:	IMOS-Systemair, s.r.o., Kalinkovo 146, 900 43 Kalinkovo, Slovak Republic
Task No.:	PR-11-0430
Specimen received:	05. 09. 2011
Date of the test:	05. 10. 2011

Technician responsible for the technical side of this report: Ing. Peter Rákoci

Number of pages: 20
Test reports: 3 Copy No.: 2

Distribution list:

Copy No. 1	FIRES, s. r. o., Osloboditeľov 282, 059 35 Batizovce, Slovak Republic (electronic version)
Copy No. 2	IMOS-Systemair, s.r.o., Kalinkovo 146, 900 43 Kalinkovo, Slovak Republic (electronic version)
Copy No. 3	IMOS-Systemair, s.r.o., Kalinkovo 146, 900 43 Kalinkovo, Slovak Republic

This report includes accreditation mark SNAS with additional mark ILAC-MRA. SNAS is signatory of ILAC-MRA, Mutual recognition agreement (of accreditation), which is focused on promoting of international acceptance of accredited laboratory data and reducing technical barriers to trade, such as the retesting of products on markets of signatories. More information about ILAC-MRA is on www.ilac.org. Signatories of ILAC-MRA are e.g. SNAS (Slovakia), CAI (Czech Republic), PCA (Poland), DakkS (Germany) or BMWA (Austria). Up to date list of ILAC-MRA signatories is on www.ilac.org/documents/mra_signatories.pdf. FIRES, s.r.o. Batizovce is full member of EGOLF also, more information www.egolf.org.uk.

FIRES, s.r.o., Osloboditeľov 282, 059 35 Batizovce, Slovak Republic
tel. 00421 52 775 22 98, fax. 00421 52 788 14 12, www.fires.sk
Notified Body No. 1396, Approved Body No. SK01, Member of EGOLF

1. INTRODUCTION

This test report contains the results of test carried out by testing laboratory of FIRES, s.r.o. in Batizovce. The purpose of the test was to gain information for product classification.

Sponsor's representatives witnessing the test:

Ing. Ondrej Ertl, CSc.	IMOS-Systemair
Ing. Ernest Mocný, CSc.	IMOS-Systemair
Ing. Michal Repovský	IMOS-Systemair

test directed by	Ing. Marek Gorlický
test carried out by	Ing. Peter Rákoci
operator	Ing. Štefan Rástocký

2. MEASURING EQUIPMENT

Identification number	Measuring equipment	Note
F 90 004	Horizontal test furnace for fire resistance testing	-
F 69 010	PLC system for data acquisition and control TECOMAT TC 700	-
F 40 019	Visual and calculating software to PLC TECOMAT TC 700	-
F 40 017	Control and communication software to PLC TECOMAT TC 700	-
F 40 018	SW Reliance	-
F 40 020	Driver Tecomat - Reliance (SW)	-
F 71 008, F 71 009	Transducer of differential pressure (–50 to + 150) Pa	pressure inside the test furnace
F 54 020	Digital calliper (0 to 200) mm	-
F 54 058	Racking meter	-
F 73 002	Suspension load-cell scale	finding out of humidity equilibrium state
F 57 005, F 57 007	Digital stop-watch	-
F 92 005	Air aggregate	-
F 92 011	Condensing unit	-
F 92 013	Exhaust air distribution system	-
F 59 003	Flow meter with anemometer (3-300) Nm^3	integrity of the specimen, leakage
F 69 009	PLC system for data acquisition and climate control TECOMAT TC 604	measuring of the climatic conditions
F 60 001 - F 60 009	Sensors of temperature and relative air humidity	measuring of the climatic conditions
F 40 003	Software for calculation of air flow per orifice plate	integrity of the specimen, leakage
F 08 501 - F 08 508	Plate thermometers	temperature inside the test furnace, according to EN 1363-1
F 08 002 - F 08 200	Unsheathed thermocouples type K 2 x Ø 0,5 mm	temperatures on the unexposed surface of the specimen
F 08 701	Sheathed thermocouple type K Ø 3 mm	ambient temperature
F 08 001	Unsheathed thermocouple type K, 2 x ∅ 0,5 mm	roving thermocouple
F 90 005	Gap gauge for fire resistance testing ∅ 25 mm	-

Identification number	Measuring equipment	Note
F 90 006	Gap gauge for fire resistance testing ∅ 6 mm	-
F 90 007	Frame for supporting the cotton pad (100 x 100) mm for fire resistance tests	-
F 57 005, F 57 007	Digital stop-watch	-

3. PREPARATION OF THE SPECIMEN

Testing laboratory has carried out specimen sampling. The test specimen data about certified production are listed in following table:

Place of production	IMOS-Systemair, s.r.o., Kalinkovo 146, 900 43 Kalinkovo, Slovak Republic
Production number	612020580001
Date of production	12. 08. 2011
Date of check out	18. 08. 2011
Number of certificate ISO 9001	SK13249QE
Issuing Body	Bureau Veritas Certification Slovakia s.r.o., Bratislava, Slovakia
Date of issuing	23. 06. 2009

Specimen and duct was delivered to the testing laboratory in complete state by test sponsor. Installation of the specimen to the supporting construction was carried out by workers of sponsor of the test under the supervision of the testing laboratory.

4. PREPARATION OF THE TEST

4.1 DESCRIPTION OF THE SPECIMEN STRUCTURE

The specimen of circular cartridge fire damper type PKI-C is used for fire resistance test. Fire damper is designed to be inserted into the circular duct.

Construction of fire damper: damper housing (damper body), damper blade and damper actuating mechanism with thermal release mechanism of the damper blade.

nominal specimen dimension (external diameter of the damper housing)	Ø 200 mm
internal diameter of the damper housing	Ø 195 mm
diameter of the damper blade	Ø 186,6 mm

Fire damper housing
Fire damper housing is made of 0,9 mm thick steel sheet, surface lacquered by 200 µm thick powder coat. Length of the housing: 60 mm. Damper housing consists of one part.

The EPDM seal with dimensions (12 x 10), (width x height) is inserted inside the groove, on the outer surface of damper housing. The intumescent fire tape Intumex L/HP with dimensions (1,8 x 13) mm, (thickness x width) is glued on the outer steel sheet surface below the EPDM seal.

The intumescent fire prevention laminate Intumex® L/HP with cross section dimensions (1,8 x 13) mm is glued around the internal perimeter of the damper housing, at the location of closed damper blade. Manufacturer: bip GmbH.

Damper blade
Damper blade consists of two semicircular parts (segments).

The both parts are made of 10 mm thick calcium-silicate board PROMATECT® H (manufacturer: Promat GmbH). The faces of the board PROMATECT® H are not covered with any fire prevention material. The outer faces of the opened damper blade are covered by seal foam MS30UL (Masterfoam, Netherlands).

The strip of ceramic fibre tape Akera with dimensions (2,0 x 10) mm, (thickness x width) is glued on one edge of damper blade segment in the contact area of segments (manufacturer: Vypos Slovakia).

Fire damper actuating mechanism with thermal release mechanism
The test specimen is equipped with manual actuating mechanism with torsion spring fixed between the segments of damper blade (manufacturer IMOS-Systemair, Slovakia).

Segments of damper blade are opened manually, by pushing the detent steel sheet and simultaneous suppression of the spring force. The segments are secured in the open position by the thermal fuse with fusing point of 72 °C. Thermal fuse is inserted between the segments of opened damper blade and is continuously loaded by tensile stress from the spring until the damper starts to close.

Automatic closing of the damper blade is commenced by reaction of the thermal fuse when achievement of the temperature 72 °C. Movement of segments is realized by a torsion spring. Each segment of damper blade is secured in closed position by detent spring fixed to the damper housing.

More detailed information about construction of specimen is shown in the drawings which form an integral part of this test report. Drawings were delivered by sponsor.

All the information about technical specifications of used materials and semi-products, information about their type sign were delivered by sponsor. This information was not subject of the inspection of specimen. Parameters which were checked are quoted in paragraph 4.3.

4.2 DESCRIPTION OF THE SPECIMEN FIXATION

The test specimen was inserted into the spiro-duct and positioned in regard to supporting construction so that the damper blade is located within the opening of supporting construction.

Parameters of the tested spiro-duct:

Internal diameter	Ø 201 mm
Length	750 mm
Steel sheet thickness	0,50 mm

Spiro-duct was installed into the aerated concrete floor supporting construction in accordance with the Table 5 of EN 1366-2. Overall thickness of floor: 125 mm. Duct was placed in regard to the supporting construction so that the centre of the duct length was identical with the centre of thickness of supporting construction.

The plastic air valve “Balance-E-200” (Systemair AB, Sweden) was installed at the end of the duct part exposed to fire. Air valve was adjusted to maximum open position.

The connecting duct, 404 mm long, is a part of the test specimen. The spiro-duct is coupled with connecting duct by means of coupling without flanges.

Gap between the supporting construction and spiro-duct in the place of penetration through the supporting construction is 30 mm wide. The space around duct is filled by cement mortar.

More detailed information is shown in drawings which form the integral part of this report.

Orientation of test specimen during the test:

Damper blade opened towards the test furnace (thermal release mechanism placed on the side closer to the test furnace), Damper and duct installed in horizontal supporting construction (connecting duct in vertical position),

Note: Orientation of the specimen was selected in order to cover the target of field of application in the fire resistance classification. Orientation of the specimen was chosen on the basis of the results of previous tests of similar damper type in order to the worst combination of parameters to be tested. Results of the tests used as a support for this specimen selection are listed in the test report FIRES-FR-180-11-AUNE.

4.3 INSPECTION OF THE SPECIMEN

The conformity of the drawings and the test specimen was checked before and after the fire resistance test. The specimen corresponded to the drawings which are part of this test report. The visual review of the test specimen, the used materials as well as the size verification (basic dimension, dimensions of components e.g. insulating boards, sheets) and also the way of specimen fixation to supporting construction were subject of this inspection.

4.4 CLIMATIC CONDITIONING OF THE SPECIMEN

Test specimen was stored in the hall of testing laboratory and was conditioned according to EN 1363-1 under the following climatic conditions:

Ambient air temperature [°C]

mean	23,1
standard deviation	0,6

Relative air humidity [%]

mean	49,2
standard deviation	4,6

5. CARRYING OUT OF THE TEST

5.1 CONDITIONS OF THE TEST

Conditions in the test furnace (temperature – standard temperature/time curve, pressure, content of O_2, leakage of connecting duct and measuring line) as well as in the testing room (ambient temperature) corresponded to EN 1363-1 and EN 1366-2 during the test. Detailed information is part of this test report, or in quality records of the testing laboratory.

Values characterizing environment in the testing room directly before the test:

Relative air humidity [%]	**Ambient air temperature [°C]**
43,6	24,4

5.2 RESULTS OF THE TEST

Opening and closing test according to clause 10.2 of EN 1366-2
The opening and closing test (50 cycles) was carried out on the test specimen before the determination of leakage at ambient temperature. The opening and closing test was performed manually. The damper blade of the test specimen was not damaged during the test. The operation of the damper was not failed.

Determination of leakage at ambient temperature according to clause 10.3 of EN 1366-2

Volume flow achieved during the test: 0,0 m^3/h = 0,0 $m^3/h/m^2$
Limit volume flow (corrected to dimensions of the tested damper): 6,0 m^3/h

Note: Neutral values of the volume flow are quoted because the measured values were less than uncertainty of measurement

The determination of leakage at ambient temperature was carried out provided that the underpressure of -300 Pa was maintained in the connecting duct, relative to the pressure in the laboratory.

According to EN 1366-2, limit volume flow to evaluate the leakage at ambient temperature is 200 $m^3/h/m^2$ (corrected to 20 °C).

Fire resistance test
Fire resistance test consisted of measurements and observations according to clause 10.4 of EN 1366-2.

Closing time of the specimen at the test was up to 1 second.

Differential of connecting duct pressure against test furnace pressure during the fire resistance test was -300 Pa (according to the Figure No. 2 of EN 1366-2).

Measured values for evaluation of leakage at fire and insulation criteria are shown in tables which are a part of this test report.

Description of behaviour of the specimen during the test:

Time [min:s]	**Face of specimen**	**Observation**
00:23*	ES	damper blade closed (time from igniting the burners),
00:30	ES	burning and melting of the air valve,
02:00	ES	air valve is melted and fallen down,
15:00	ES, NS	no changes,
30:00	NS	no changes,
45:00	NS	no changes,
60:00	NS	no changes,
80:00	NS	cracks in the supporting construction, smoke release from the cracks,
90:00	NS	no changes,
180:00	NS	no other changes,
100:30	termination of the test.	

* time to close of the damper is measured from igniting the furnace,
otherwise (without *) it is measured from the beginning of the test as defined by EN 1363-1
ES exposed face of specimen
NS unexposed face of specimen

6. CLOSING

Evaluation of the test:

Performance criterion	**Time till the performance criterion is achieved**
integrity – leakage at fire (10,8 m^3/h = 360 $m^3/h/m^2$)	100 minutes no failure
integrity – sustained flaming	100 minutes no failure
integrity – gap gauges ∅ 6 mm and ∅ 25 mm	100 minutes no failure
integrity – cotton pad	100 minutes no failure
insulation – average temperature (140 K)	100 minutes no failure
insulation – maximal temperature (180 K)	100 minutes no failure
leakage (6,0 m^3/h = 200 $m^3/h/m^2$)	100 minutes no failure

The fire test was terminated in the 101st minute at request of the sponsor.

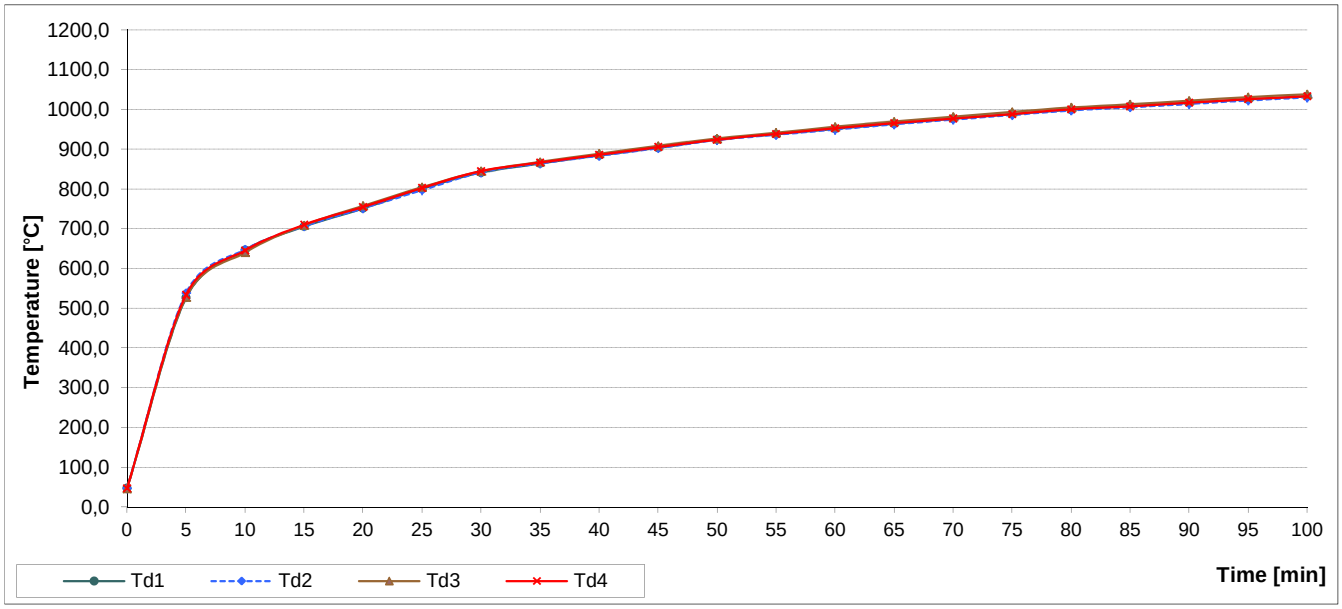
Measured values inside the test furnace

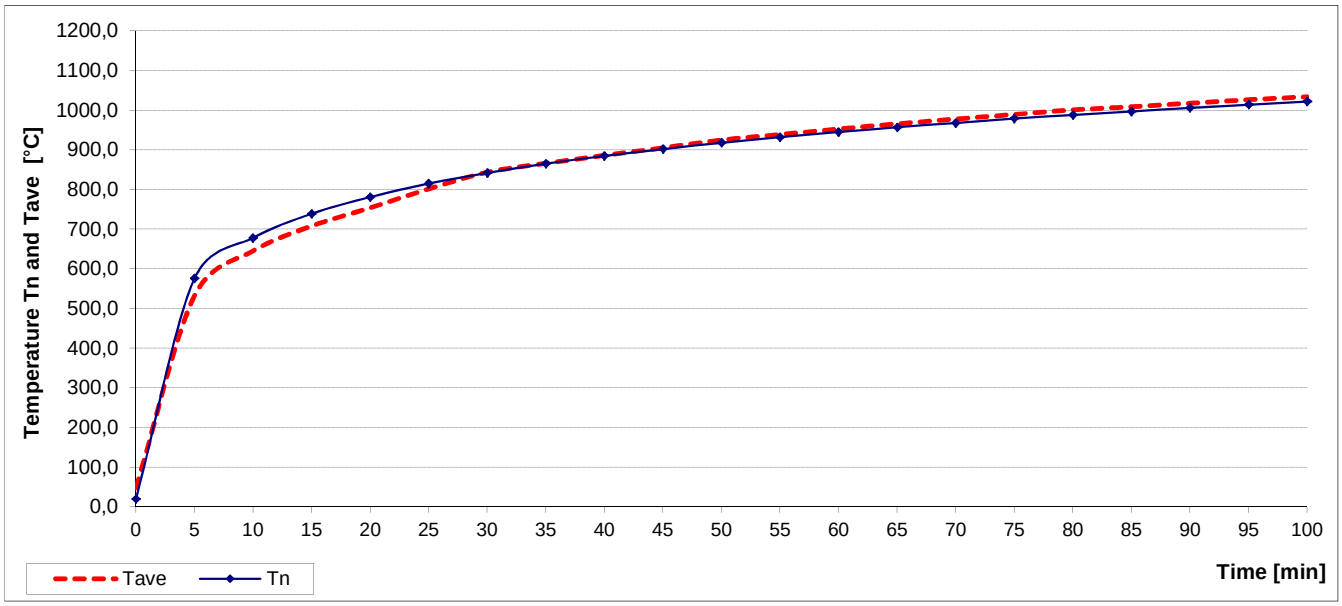
Time	Temperature [°C]							Deviation	Pressure [Pa]
t [min]	Td1	Td2	Td3	Td4	Tave	Tn	To	d_e [%]	p1
0	47,9	47,3	46,9	47,6	47,4	20,0	24,4	0,0	0,0
5	526,7	538,8	528,7	534,3	532,1	576,0	24,7	-4,7	19,0
10	646,6	647,9	640,5	645,7	645,2	678,0	23,5	-5,5	18,9
15	705,6	706,8	709,0	710,4	708,0	739,0	23,3	-5,1	18,9
20	751,4	751,5	757,8	755,1	754,0	781,0	23,3	-4,8	19,5
25	801,0	797,3	804,9	803,0	801,6	815,0	23,3	-4,3	19,9
30	841,7	842,2	845,0	845,4	843,6	842,0	23,6	-3,5	22,6
35	864,3	864,5	868,2	866,9	866,0	865,0	23,7	-2,9	19,3
40	884,8	883,9	888,9	886,5	886,0	885,0	23,8	-2,4	20,4
45	903,8	902,8	908,8	905,9	905,3	902,0	23,9	-2,1	20,2
50	924,6	923,4	927,0	924,3	924,8	918,0	24,2	-1,8	20,3
55	938,1	936,7	941,8	938,8	938,9	932,0	24,2	-1,5	20,2
60	951,5	949,7	956,7	952,8	952,7	945,0	24,1	-1,3	18,7
65	964,6	962,8	969,9	966,0	965,8	957,0	24,2	-1,1	19,4
70	976,9	974,8	982,3	977,3	977,8	968,0	24,3	-0,9	20,4
75	988,6	986,3	994,0	988,8	989,4	979,0	24,5	-0,8	20,7
80	999,7	997,8	1005,2	1000,7	1000,9	988,0	24,6	-0,6	19,6
85	1008,4	1005,6	1013,2	1007,9	1008,8	997,0	24,9	-0,5	17,6
90	1016,9	1013,9	1022,3	1017,3	1017,6	1006,0	25,1	-0,4	20,0
95	1025,7	1023,0	1031,3	1026,0	1026,5	1014,0	25,2	-0,3	19,1
100	1033,1	1030,6	1038,4	1033,4	1033,9	1022,0	25,0	-0,2	21,4

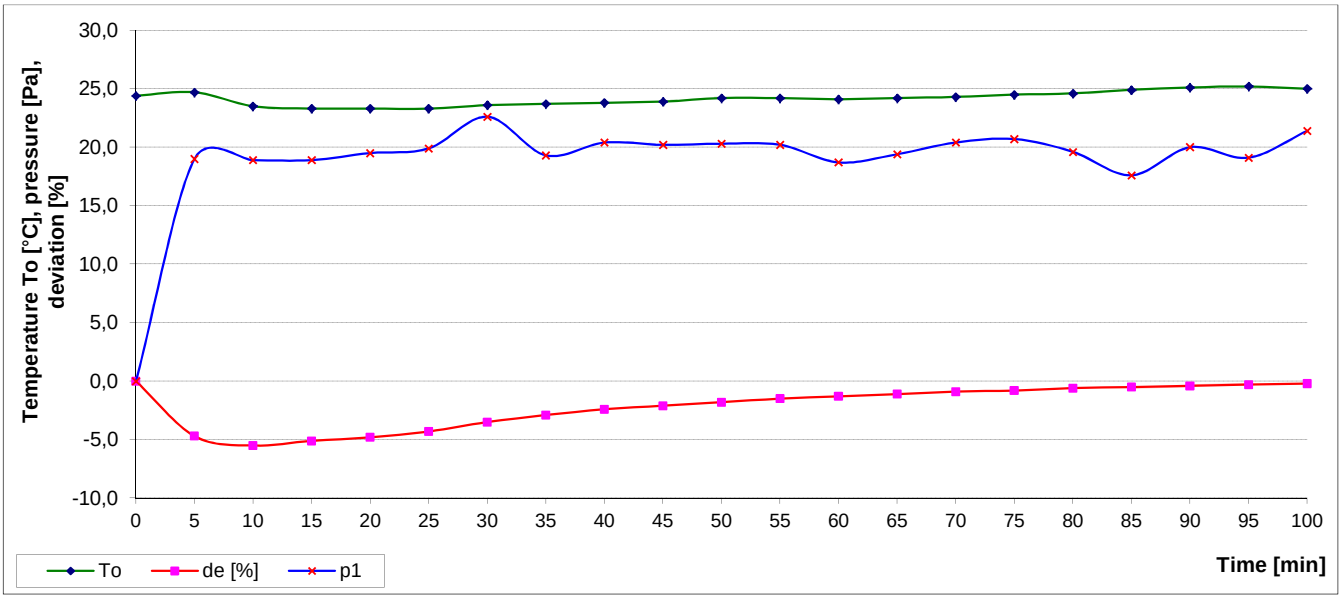
Tave Average temperature in the test furnace calculated from individual thermometers
Tn Standard temperature in the test furnace laid down according to test guideline
d_e Deviation of the average temperature from the standard temperature calc. acc. to test guideline
To Ambient temperature
p1 Pressure in the test furnace measured in distance of 100 mm from the bottom edge of damper supporting construction

Layout of the thermometers inside the test furnace:
Equally around the damper blade according to EN 1366-2

Measured values inside the test furnace / graph







Measured values on the unexposed surface of the specimen, part 1

The initial average temperature of the unexposed specimen surface: 26,1 °C

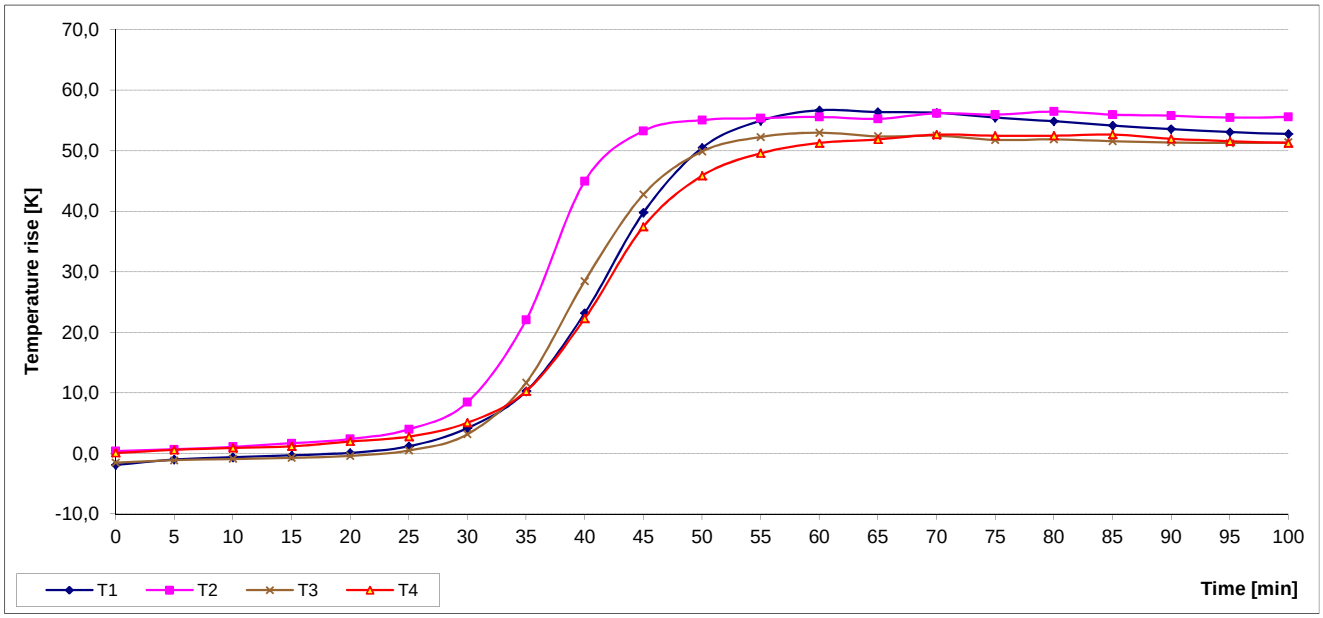
Time	Temperature rise [K]											
t [min]	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12
0	-1,9	0,4	-1,5	0,1	0,6	1,7	-0,1	0,5	0,1	0,8	-2,0	1,2
5	-1,0	0,7	-1,1	0,6	8,0	3,5	6,8	8,9	3,4	5,0	1,5	4,7
10	-0,6	1,1	-0,9	0,9	14,3	12,6	17,3	16,0	10,2	11,2	8,2	11,4
15	-0,3	1,7	-0,7	1,2	19,6	18,0	22,2	23,0	14,4	15,1	13,0	16,0
20	0,1	2,4	-0,4	2,0	31,4	25,4	26,8	31,3	22,4	23,2	21,3	23,8
25	1,2	4,0	0,5	2,8	33,3	29,8	32,2	31,8	25,9	27,3	25,0	27,4
30	4,2	8,5	3,2	5,1	36,4	34,3	35,6	38,2	25,0	26,5	24,7	26,8
35	10,3	22,1	11,7	10,3	47,5	42,3	45,7	47,4	25,6	25,8	23,5	27,3
40	23,2	45,0	28,5	22,3	57,0	51,7	55,9	55,9	28,6	26,9	25,3	28,8
45	39,8	53,3	42,8	37,5	63,1	56,8	61,6	60,5	34,2	30,7	29,1	34,8
50	50,5	55,1	49,9	45,9	65,9	60,7	67,3	64,6	38,4	35,5	34,4	40,5
55	55,0	55,4	52,3	49,6	70,9	65,3	69,8	70,0	42,6	39,3	38,9	44,7
60	56,7	55,6	53,0	51,3	77,0	72,3	75,1	77,0	47,1	44,0	43,9	49,1
65	56,4	55,3	52,4	51,9	83,3	77,3	80,1	85,3	49,4	45,1	46,6	51,4
70	56,3	56,2	52,5	52,7	95,0	87,8	92,2	97,7	53,0	48,6	50,3	54,5
75	55,5	56,0	51,8	52,5	109,5	100,9	105,0	108,6	57,6	54,0	53,5	57,8
80	54,9	56,5	51,9	52,5	118,0	110,0	118,5	117,5	61,8	57,3	57,4	62,2
85	54,2	56,0	51,6	52,7	125,4	117,8	126,5	125,4	65,9	60,6	60,3	66,8
90	53,6	55,8	51,4	52,0	130,8	122,3	132,2	130,1	67,5	64,4	63,9	69,3
95	53,1	55,5	51,3	51,6	137,2	125,7	138,8	135,8	72,3	68,1	67,2	72,5
100	52,8	55,6	51,4	51,3	140,4	130,3	142,7	138,5	73,8	69,2	70,4	74,4

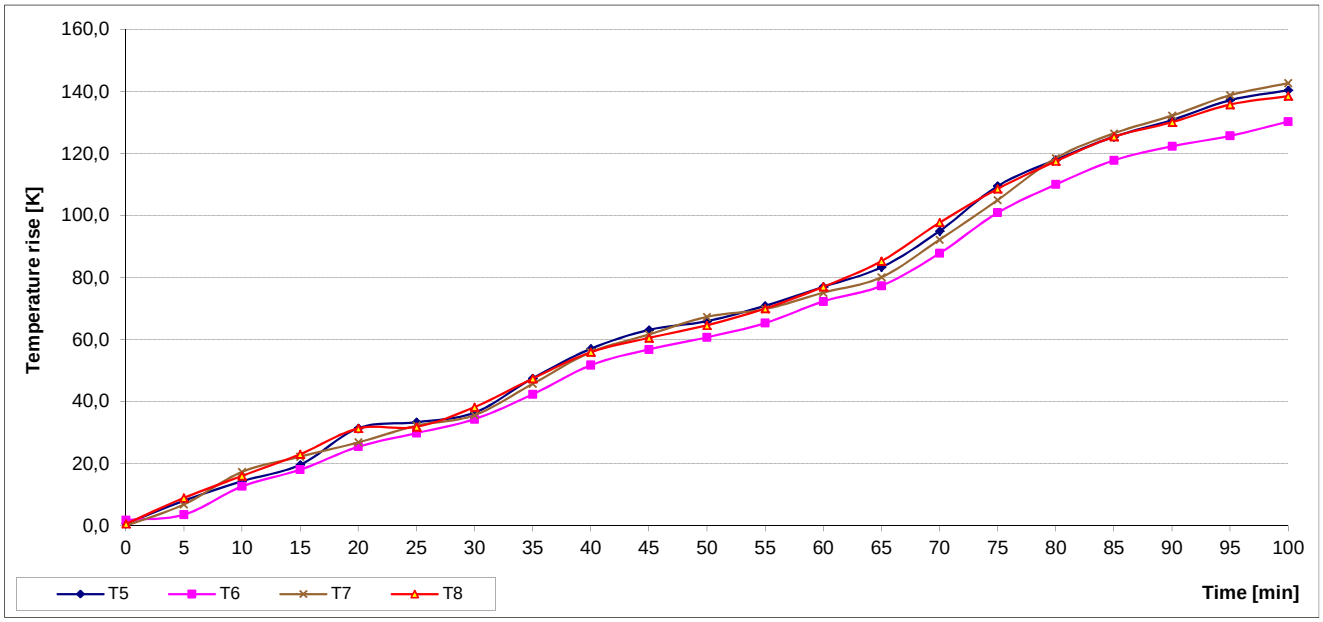
Negative values are quoted because temperature rises are calculated from the initial average temperature of the specimen surface.

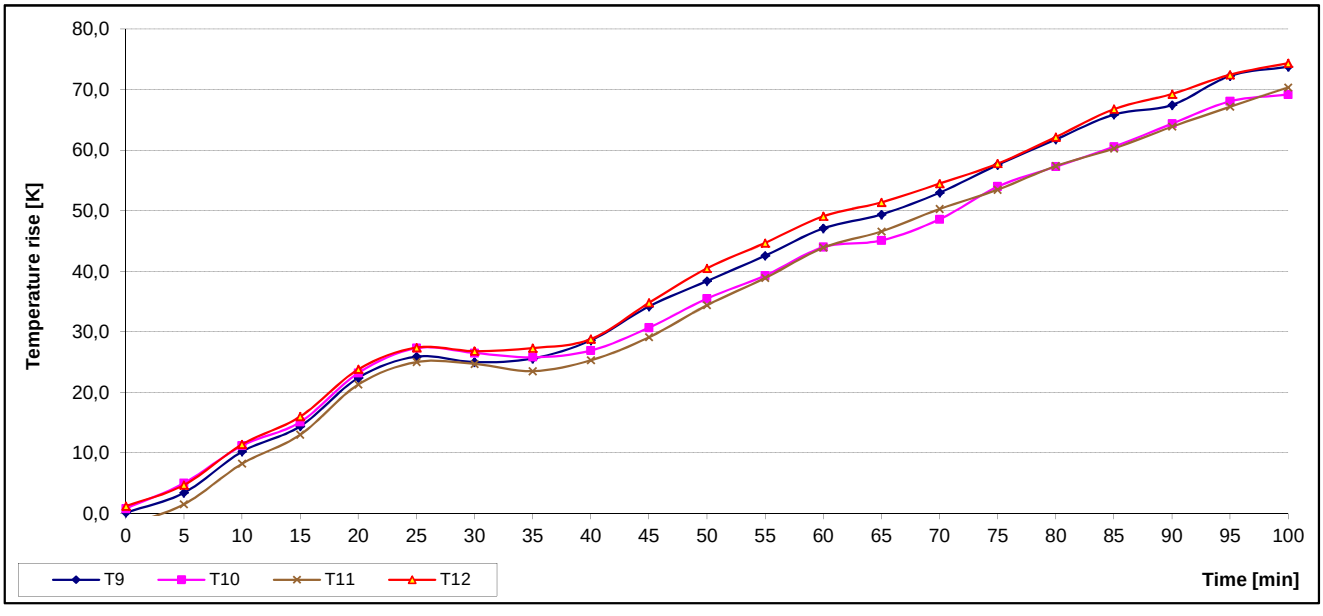
T1 - T8 Thermocouples measured on the specimen surface for evaluation of the maximum temperature rise
T9 - T12 Thermocouples measured on the specimen surface for evaluation of the average and maximum temperature rise

Please see figure showing the layout of measuring points on the specimen surface which is a part of this test report

Measured values on the unexposed surface of the specimen, part 1/graph







Measured values on the unexposed surface of the specimen, part 2

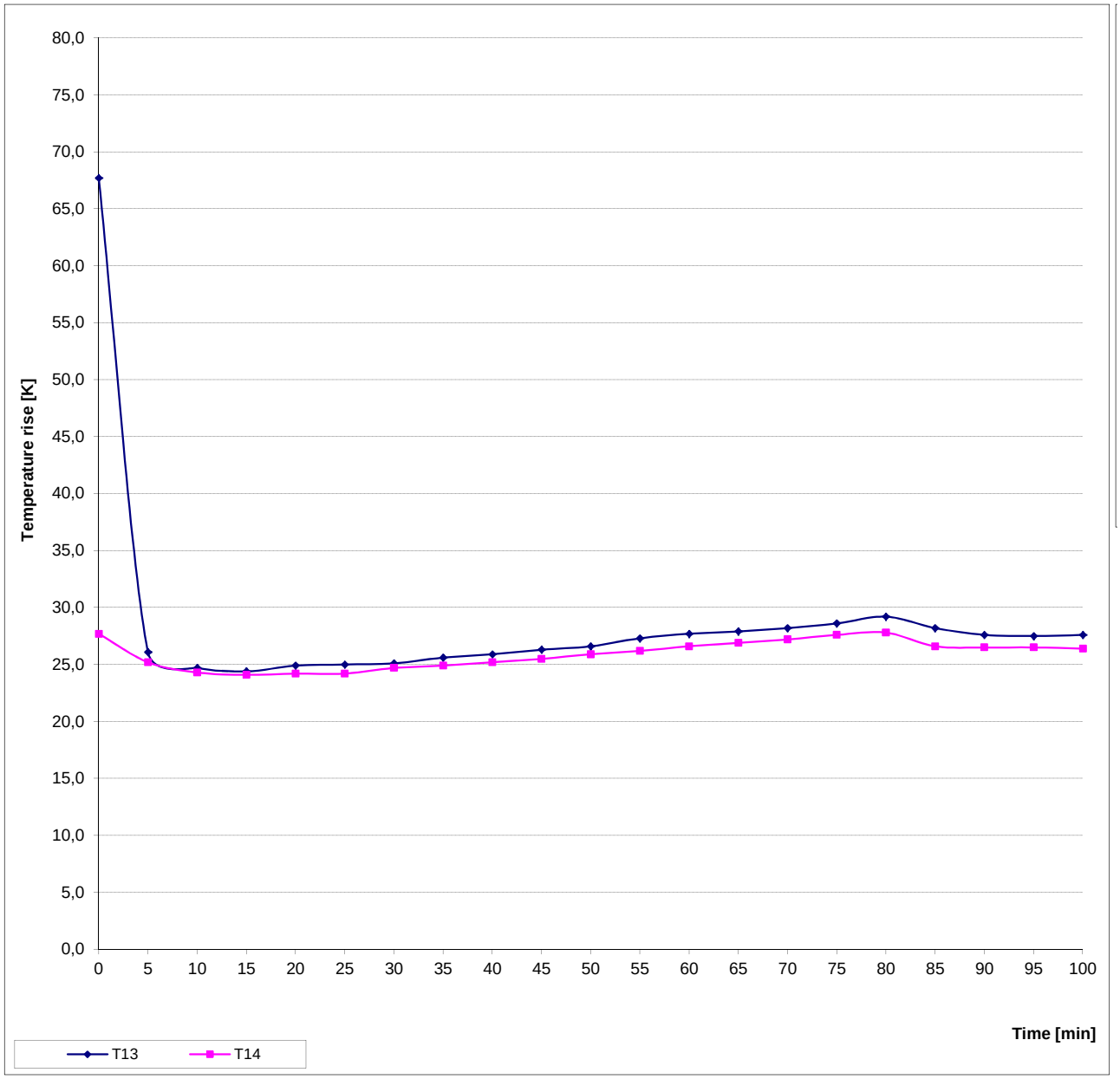
The initial average temperature of the unexposed specimen surface: 26,1 °C

Time	Temperature [°C]	
t [min]	T13	T14
0	67,7	27,7
5	26,1	25,2
10	24,7	24,3
15	24,4	24,1
20	24,9	24,2
25	25,0	24,2
30	25,1	24,7
35	25,6	24,9
40	25,9	25,2
45	26,3	25,5
50	26,6	25,9
55	27,3	26,2
60	27,7	26,6
65	27,9	26,9
70	28,2	27,2
75	28,6	27,6
80	29,2	27,8
85	28,2	26,6
90	27,6	26,5
95	27,5	26,5
100	27,6	26,4

Negative values are quoted because temperature rises are calculated from the initial average temperature of the specimen surface.

T13 Thermocouple placed in the connecting duct outlet prior to the cooler (measurement of absolute temperature)
T14 Thermocouple placed in the connecting duct behind the cooler and prior to flowmeter (measurement of absolute temperature)

Measured values on the unexposed surface of the specimen, part 2/graph



Measured and calculated values of the specimen

The initial average temperature of the unexposed specimen surface: 26,1 °C

Time	Temperature rise [K]	
t [min]	TRave	TRmax
0	0,0	1,7
5	3,7	8,9
10	10,3	17,3
15	14,6	23,0
20	22,7	31,4
25	26,4	33,3
30	25,8	38,2
35	25,6	47,5
40	27,4	57,0
45	32,2	63,1
50	37,2	67,3
55	41,4	70,9
60	46,0	77,0
65	48,1	85,3
70	51,6	97,7
75	55,7	109,5
80	59,7	118,5
85	63,4	126,5
90	66,3	132,2
95	70,0	138,8
100	72,0	142,7

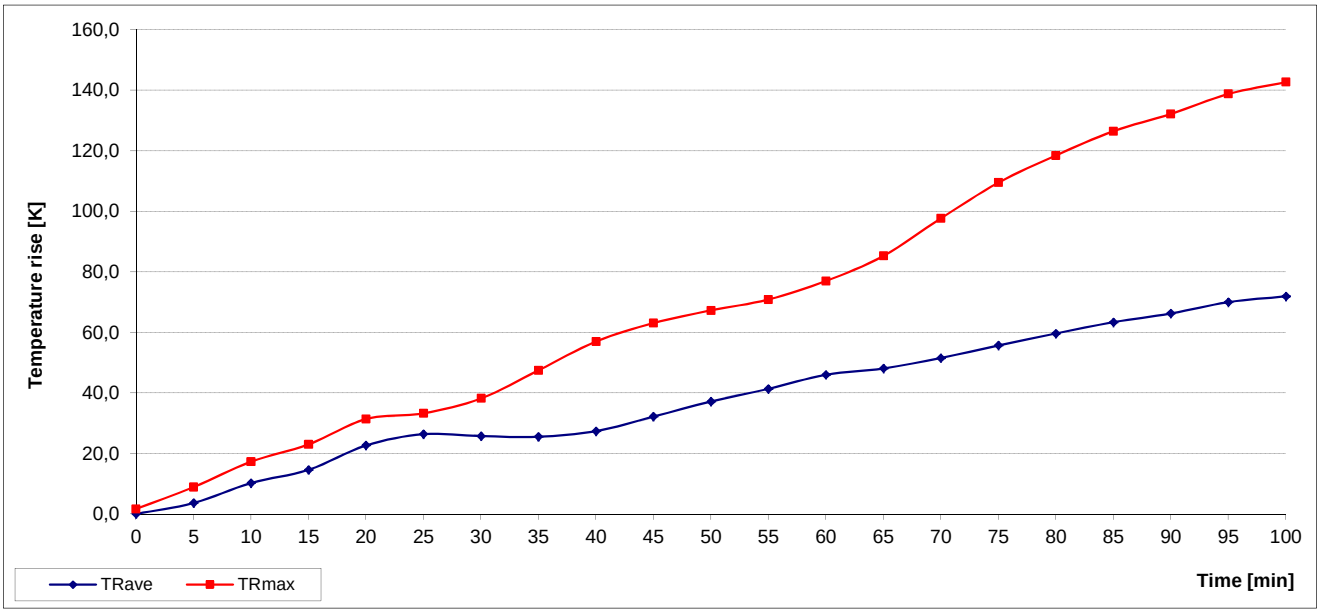
Time	Volume flow	
t [min]	Qv [m^3/h]	Qvp [$m^3/(h.m^2)$]
0	-	-
5	0,0	0,0
10	0,0	0,0
15	0,0	0,0
20	0,0	0,0
25	0,0	0,0
30	0,0	0,0
35	0,0	0,0
40	0,0	0,0
45	0,0	0,0
50	0,0	0,0
55	0,0	0,0
60	0,0	0,0
65	0,0	0,0
70	0,0	0,0
75	0,0	0,0
80	0,0	0,0
85	0,0	0,0
90	0,0	0,0
95	0,0	0,0
100	0,0	0,0

Note: Neutral values of the volume flow are quoted because the measured values were less than uncertainity of measurement

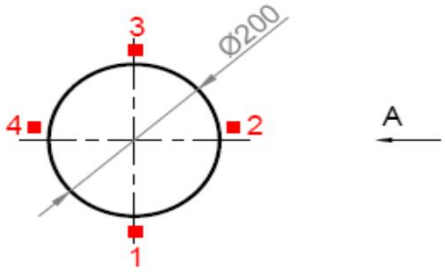
TRave Average temperature rise on the specimen surface calc. from thermocouples T9 - T12
TRmax Maximum temperature rise on the specimen surface calc. from thermocouples T1 - T12

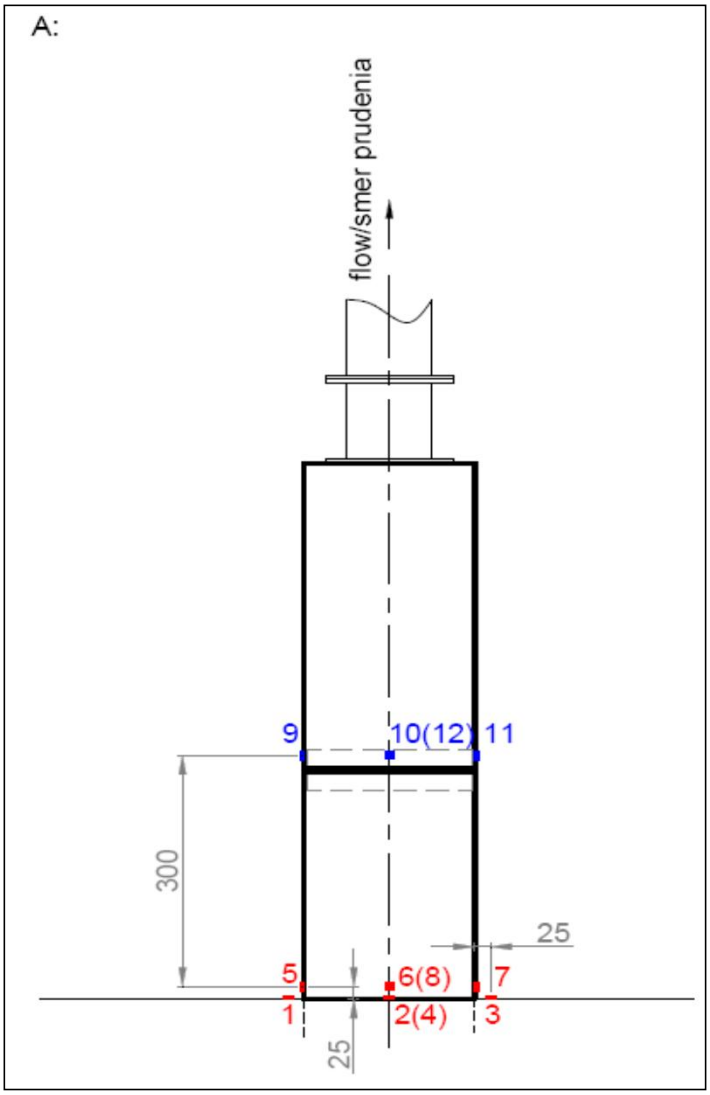
Qv Volume flow of exhausted air, stated according to ISO 5167-1:1991 corrected to relative conditions (20 °C and 101 325 Pa)
Qvp Volume flow Qv corrected to unit of damper surface area

Measured and calculated values of the specimen / graph



Layout of measuring points on the unexposed specimen surface





Thermocouples for evaluation of the average and maximum temperature rise

Thermocouples for evaluation of the maximum temperature rise

PHOTOS TAKEN DURING THE TEST

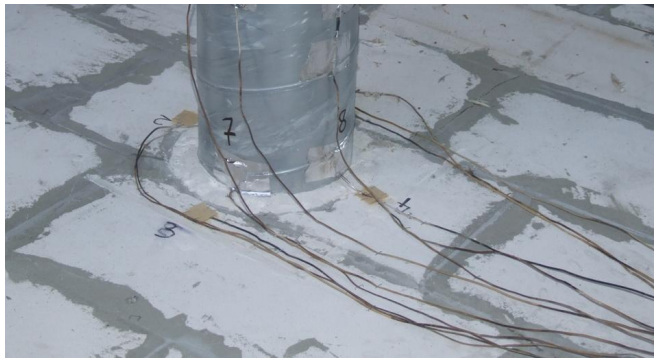
Exposed face of the test specimen during the test preparation process

Exposed face of the test specimen before the test commencement

62nd minute of the test

62nd minute of the test

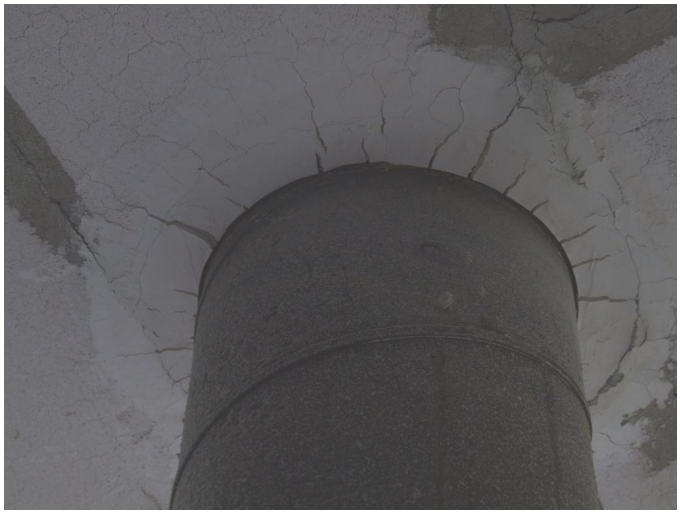
81st minute of the test



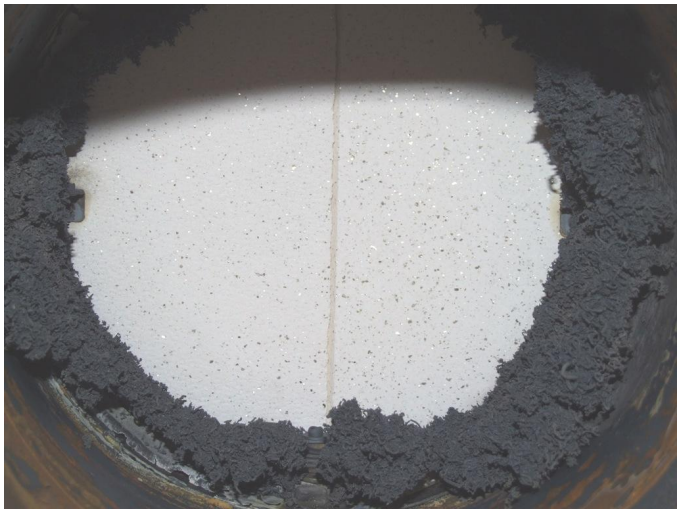
PHOTOS TAKEN DURING THE TEST

100th minute of the test

100th minute of the test

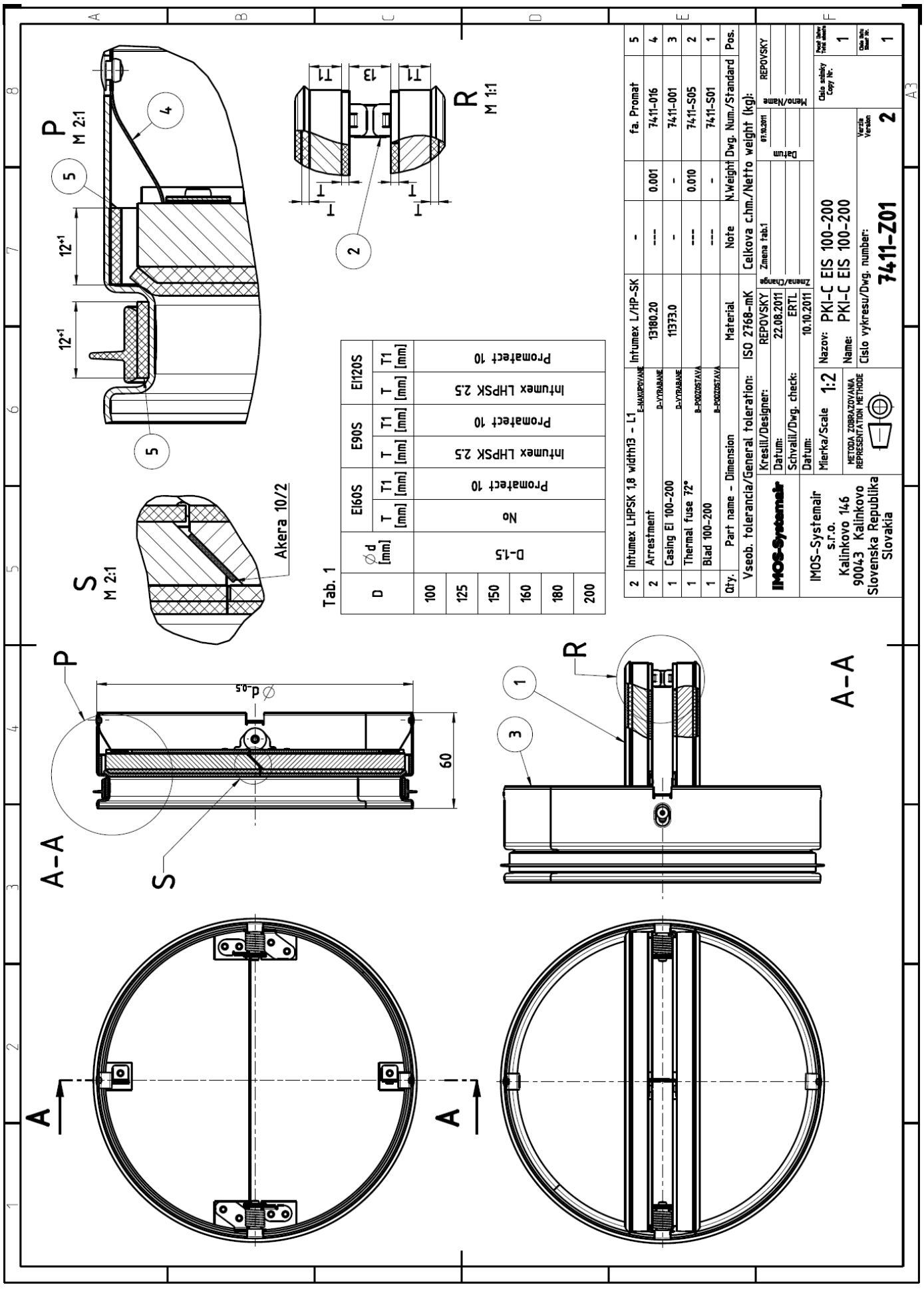


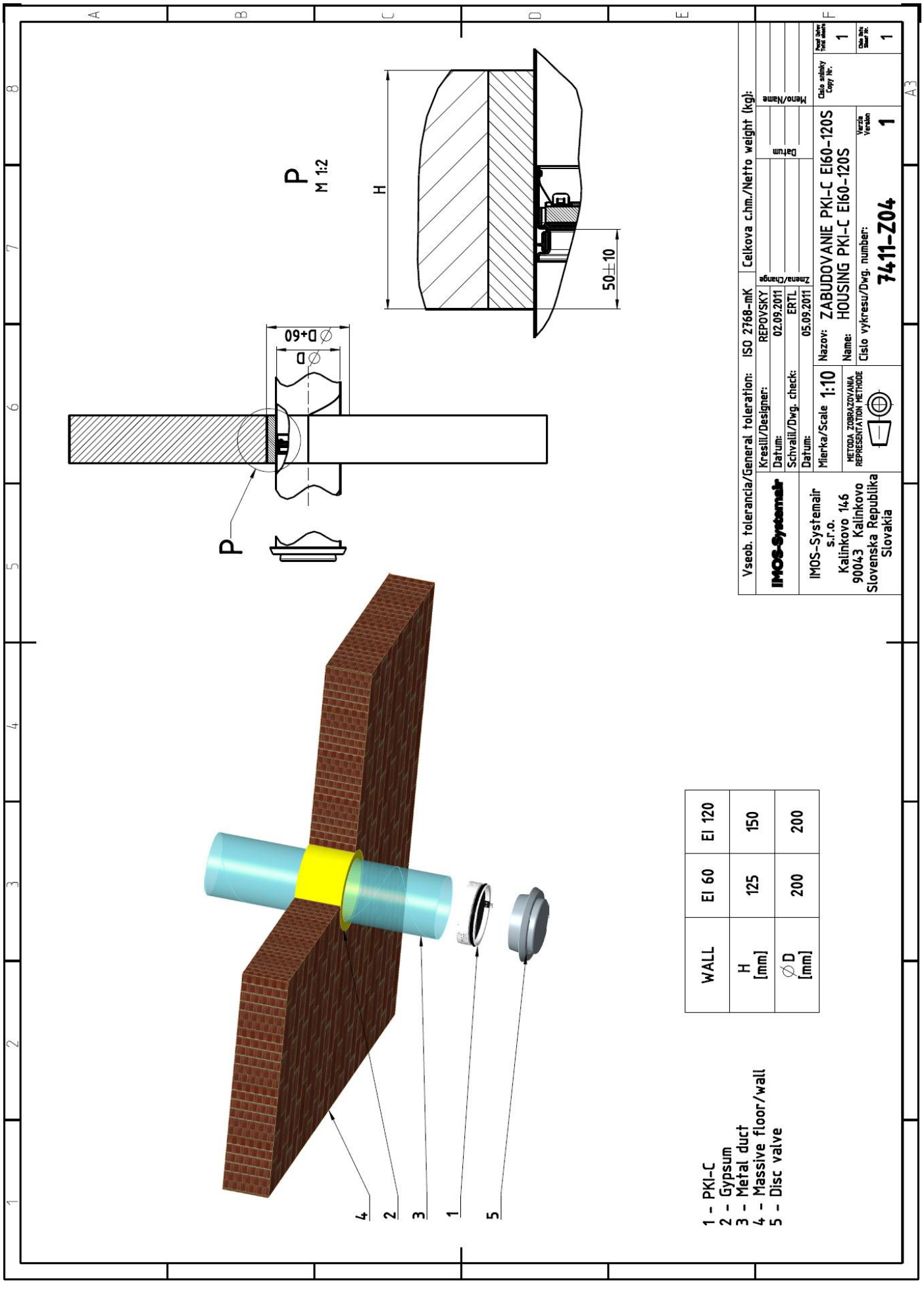
Exposed face of specimen after the test



Exposed face of damper blade after the test

DRAWINGS


P
M 2:1
S
M 2:1
R
M 1:1
A–A
A–A
Akera 10/2
12+1
12+1
T1
13
T1
T
T
T
T
60
d-0,5
1
2
3
4
5
5
A
A
Tab. 1
D
Ød [mm]
EI60S
E90S
EI120S
T [mm]
T1 [mm]
No
Promatect 10
Intumex LHPSK 2,5
D-1,5
100
125
150
160
180
200
2 Intumex LHPSK 1,8 width13 – L1 E-NAKUPOVANE Intumex L/HP-SK - fa. Promat 5
2 Arrestment D-VYRABANE 13180.20 --- 0.001 7411-016 4
1 Casing EI 100-200 D-VYRABANE 11373.0 - - 7411-001 3
1 Thermal fuse 72° B-POZOSTAVA --- 0.010 7411-S05 2
1 Blad 100-200 B-POZOSTAVA --- - 7411-S01 1
Qty. Part name - Dimension Material Note N.Weight Dwg. Num./Standard Pos.
Vseob. tolerancia/General toleration: ISO 2768-mK Celkova c.hm./Netto weight (kg):
IMOS-Systemair
Kreslil/Designer: REPOVSKY Zmena/Change Zmena tab.1 Datum 07.10.2011 Meno/Name REPOVSKY
Datum: 22.08.2011
Schvalil/Dwg. check: ERTL
Datum: 10.10.2011
IMOS-Systemair s.r.o. Kalinkovo 146 90043 Kalinkovo Slovenska Republika Slovakia
Mierka/Scale 1:2
METODA ZOBRAZOVANIA REPRESENTATION METHODE
Nazov: PKI-C EIS 100-200
Name: PKI-C EIS 100-200
Cislo vykresu/Dwg. number: 7411-Z01
Verzia Version 2
Cislo kopie Copy No. 1
Pocet listov Total sheets 1
Cislo listu Sheet No. 1


P
M 1:2
H
50±10
D+60
D
P
4
2
3
1
5
1 - PKI-C
2 - Gypsum
3 - Metal duct
4 - Massive floor/wall
5 - Disc valve
WALL
H [mm]
∅D [mm]
EI 60
125
200
EI 120
150
200
Vseob. tolerancia/General toleration: ISO 2768-mK
Celkova c.hm./Netto weight (kg):
IMOS-Systemair
Kreslil/Designer: REPOVSKY
Datum: 02.09.2011
Schvalil/Dwg. check: ERTL
Datum: 05.09.2011
Zmena/Change
Datum
Meno/Name
IMOS-Systemair s.r.o.
Kalinkovo 146
90043 Kalinkovo
Slovenska Republika
Slovakia
Mierka/Scale 1:10
METODA ZOBRAZOVANIA REPRESENTATION METHODE
Nazov: ZABUDOVANIE PKI-C EI60-120S
Name: HOUSING PKI-C EI60-120S
Cislo vykresu/Dwg. number: 7411-Z04
Verzia Version 1
Cislo strany Copy Nr. 1
Pocet listov Total sheets 1
Cislo listu Sheet Nr. 1

7. FINAL PROVISION

§ This report details the method of construction, the test conditions and results obtained when the specific element of construction described herein was following the procedure outlined in EN 1363-1, and where appropriate EN 1363-2. Any significant deviation with respect to size, constructional details, loads, stresses, edge or end conditions other than those allowed under the field of direct application in the relevant test method is not covered by this report.

§ Because of the nature of the fire resistance testing and consequent difficulty in quantifying the uncertainty of measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.

§ The test results refer only to the tested subjects. This test report is not an approval of the tested product by the test laboratory or the accreditation body overseeing the laboratory's activities. The test was carried out on testing equipment that is the property of FIRES, s.r.o., Batizovce. Without the written permission of the test laboratory this test report may be copied and/or distributed only as the whole. Any modifications of the test report can be made only by the fire resistance test laboratory FIRES, s.r.o., Batizovce.

Approved by:

Ing. Štefan Rástocký
leader of the testing laboratory

Prepared by:

Ing. Peter Rákoci
technician of the testing laboratory

8. NORMATIVE REFERENCES

STN EN 1366-2: 2001	Fire resistance tests for service installations. Part 2: Fire dampers
STN EN 1363-1: 2001	Fire resistance tests. Part 1: General requirements
STN EN 13501-3+A1: 2010	Fire classification of construction products and building elements. Part 3: Classification using data from fire resistance tests on products and elements used in building service installations: fire resisting ducts and fire dampers

THE END OF THE TEST REPORT