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Test report

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DMT-DO-50-821

Document no.	DMT-DO-50-821
case worker	Mertens
Order no.	8118302029
Customer	BUVA homecare systemen Bremen 5 2993 LJ Barendrecht Netherlands Postbus 262
Content of order	Test of a single-leave glazed wooden composite door in wooden block frame with a thickness of 54 mm, in conjunction with building hardware „**BUVA MultiFin SB/65/72-2090R DR 1+3 SKG**®, AANGEPASTE sluitkom 6025+ DrR 1+3 SKG***®, BUVA rvs sluitplaat NL BLIND v/sluitkom 6025+, BUVA zelfstellende sluitkom InLine+ - SKG**®, Dub. cil. 2002/6 + 15 mm SKG**® sl.nr 1, Langschilden KT-3500 F1 PC-72 SKG***®, Deurkrukken U-Line 120mm F1 deurdikte, BUVA deurdranger type FD-440 m/vrijloop and BUVA glijarm type FD-494 tbv FD-440“** of BUVA homecare systemen, embedded to a standard supporting construction with low density rigid with a thickness of 100 mm, for fire resistance
Test method	EN 1634-1:2014+A1:2018 in conjunction with EN 1363-1:2020 Further standards according to section 3.1
Fire exposed side	opening face / opening into the furnace

Test results	Integrity E	Thermal insulation EI_1	Thermal insulation EI_2	Radiation EW
	34 min.	13 min.	13 min.	34 min.

Date of order	**Test specimen receipt**	**Date of test**	**Date of report**	**Period of validity**
06.07.2020	23. & 28.04.2020	15.05.2020	19.08.2020	unlimited

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Notified Body:
NB 2509

DMT-Prüfstelle für Brandschutz DMT

This test report consists of 19 pages and 14 annexes.

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1 Size of order and cooperation of the test lab in choosing the test specimen

DMT GmbH & Co. KG was assigned by BUVA homecare systemen and Kegro Doors BV to carry out a fire test of a fire resisting doorset according to EN 1634-1. In addition to the verification of the door, this test should also provide verification of the suitability of the building hardware "BUVA MultiFin SB/65/72-2090R DR 1+3 SKG**®, AANGEPASTE sluitkom 6025+ DrR 1+3 SKG***®, BUVA rvs sluitplaat NL BLIND v/sluitkom 6025+, BUVA zelfstellende sluitkom InLine+ - SKG**®, Dub. cil. 2002/6 + 15 mm SKG**®, Langschilden KT-3500 F1 PC-72 SKG***®, Deurkrukken U-Line 120mm F1 deurdikte, BUVA deurdranger type FD-440 m/vrijloop and BUVA glijarm type FD-494 tbv FD-440" of the manufacturer BUVA homecare systemen for the use in fire protection doors with regard to the performance criteria according to EN 1634-1 in conjunction with EN 1363-1 (integrity and thermal insulaion).

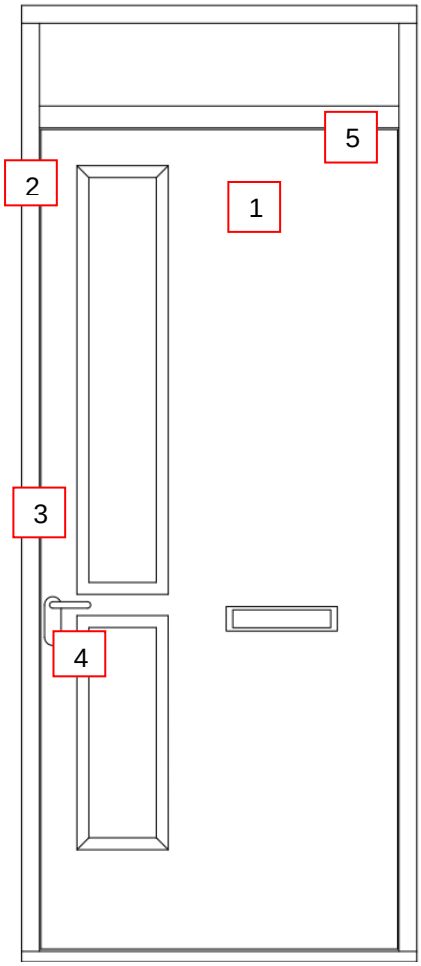
The design and construction of the fire resisting doorset was defined by BUVA homecare systemen (hardware fittings) and Kegro Doors BV (door). DMT GmbH & Co. KG was not involved in the planning of the test specimen to be tested.

2 Description of the test specimen

The description of the door construction in this test report is limited to the tested hardware fittings "BUVA MultiFin SB/65/72-2090R DR 1+3 SKG**®, AANGEPASTE sluitkom 6025+ DrR 1+3 SKG***®, BUVA rvs sluitplaat NL BLIND v/sluitkom 6025+, BUVA zelfstellende sluitkom InLine+ - SKG**®, Dub. cil. 2002/6 + 15 mm SKG**®, Langschilden KT-3500 F1 PC-72 SKG***®, Deurkrukken U-Line 120mm F1 deurdikte, BUVA deurdranger type FD-440 m/vrijloop and BUVA glijarm type FD-494 tbv FD-440" of BUVA homecare systemen. The test of the door is documented in the test report DMT-DO-50-811.

A detailed description of the door construction is deposited at DMT GmbH & Co. KG.

2.1 Door overview



2.2 Test specimen description

(all dimensions stated in mm)

Door leaf:	Position 1
Type:	Single-leaved door made from wood and wooden based materials with two glazings
Manufacturer:	Kegro Deuren B.V.
Thickness:	54
Inlay:	Particle board
Perimeter door framing:	Laminated and finger jointed hardwood (Mahogany, density 550 kg/m).
Facing:	Made from HDF with plywood subfacing and aluminium interlayer in between
Glazing:	Two glazings, dimensions:

	320 x 1240 x 10 (top) 320 x 770 x 10 (bottom)
Surface treatment:	Without
Rebate geometry:	Plain edge with double inner rebate rebate size (W x D) 11 x 11 and 12 x 13
Outside dimensions (W x H):	1100 x 2500
Weight of door leaf:	87 kg with glass
Door frame:	Position 2
Design, type:	Block frame, three sided
Material:	Frame made of hardwood (Sipo), density = 600 kg/m³
External dimensions of frame (W x H):	1194 x 2585
Frame rebate dimensions (W x H):	1106 x 2509
Clearance of opening (W x H):	1062 x 2487
Dimension of frame rebate (W x D):	Double rebate 11 x 38 and 11 x 13
Fastening:	By means of frame dowels, in total 12 pieces: Top: 2 Lateral at the lock side: 4 Lateral at the hinge side: 6
Filling of joints:	Joint width lateral and top approx. 5 mm Filled with FP PU Foam and sealed with silicone sealant on the unexposed side, at the other side covered by the frame profile.
Further details of the construction of the door leaf, the door frame, the used materials and further fittings are deposited at DMT GmbH & Co. KG and are described in detail in the test report DMT-DO-50-811.	
Lock active leaf:	Position 3, see annexes 1.1 to 1.4 and 1.8
- Designation:	“BUVA MultiFin SB/65/72-2090R DR 1+3 SKG**®”
- Manufacturer:	Buva BV
- Type:	multipoint lock cylinder operated with box type strikers
- Fastening:	10 pieces of countersunk screws Ø 4 x 40
- Number of latches / bolts:	1 / 0 and 2 fin-bolts in the side locks

- Lock measure:	BS 65 OS 72
- Forend dimensions (W x H):	20 x 2090, thickness 3
- Mounting position:	Forend flush-mounted into the door leaf in recess (D x W) 4 x 20.5 Main lock: cut-out in the door leaf (D x W x H) 88 x 18 x 184 Side locks: cut-out in the door leaf (D x W x H) 50 x 18 x 132 Intumescent seal fitted in groove behind the forend of the lock
- locking cylinder	BUVA “Dub. cil. 2002/6 + 15 mm SKG**®” locking cylinder, see annex 1.8
Striker:	See annexes 1.2 to 1.4
- Designation:	Main lock: Striker “AANGEPASTE sluitkom 6025+ DrR 1+3 SKG***®” with corresponding forend “BUVA rvs sluitplaat NL BLIND v/sluitkom 6025+” Side locks: Striker “BUVA zelfstellende sluitkom InLine+ - SKG**®”
- Manufacturer:	Buva BV
- Material:	Main lock striker: Zamac striker box with stainless steel forend Side locks strikers: Plastic composite box with steel (galvanised) security plate
- Face plate dimensions (W x H):	Main lock striker: 25 x 185 Side lock strikers: 25 x 110
- Fastening:	Main lock striker: 3 pieces of countersunk screws Ø 4 x 40 and 3 pieces of countersunk screws Ø 4 x 30 Side locks strikers: 2 pieces of countersunk screws Ø 4 x 40
- Mounting position:	Main lock striker: cut-out in frame (mullion) (D x W x H) 25,4 x 25,5 x 185,4 Side locks strikers: cut-out in frame (mullion) (D x W x H) 24,5 x 25,5 x 110,4
Handle with baseplate:	Position 4, see annexes 1.5 to 1.7
- Manufacturers designation:	U-line leverset “Deurkrukken U-Line 120mm F1 deurdikte“ on security baseplate type "Langschilden KT-3500 F1 PC-72 SKG***®“
- Manufacturer:	Buva BV
- Type:	Security lever set on baseplate 240 x 50 x 15 / 8
- Fixing:	With 3 pieces of screws M6

- Handle height (distance bottom edge door leaf to centre of handle):	1050
Door closer:	Position 5, see annex 1.9
- Manufacturers designation:	“BUVA deurdranger type FD-440 m/vrijloop” door closer and sliding rail “BUVA glijarm type FD-494 tbv FD-440”
- Manufacturer:	Buva BV
- Mounting:	Mounting on the opening side (fire exposed side), door closer with mounting plate at the door leaf, sliding rail on the frame
- Fixing:	Mounting plate for door closer to the door leaf: With 4 pieces of particle board screws Ø 5 x 40 Door closer to mounting plate: With 4 pieces of provided screws Sliding rail to frame: With 2 pieces of particle board screws Ø 4 x 50

Further details on the design and construction of the tested building hardware can be found in annexes 1.1 to 1.9 of this test report.

2.3 Supporting construction and conditioning

The door construction was lateral embedded to a standard supporting construction according to EN 1363-1 paragraph 7.2.2.2 as a massive supporting construction with low density rigid with a thickness of 100 mm. The supporting construction consisted of blocks of aerated concrete, strength class 4, density class 0.65, size (L x W x H) 62.4 cm x 10.0 cm x 24.9 cm. To the top the connection was made to a reinforced concrete lintel. For bricklaying thin bed mortar acc. to EN 998-2 was used.

The supporting construction with a thickness of 100 mm was mounted to a test frame.

The clear opening of the furnace chamber was (W x H): 4000 mm x 4000 mm.

The supporting construction was made on 08.05.2020. The test specimen was installed on 11. - 12.05.2020.

A full conditioning of the supporting construction and the verification according to paragraph 8.2 EN 1363-1 is made.

Annotation:
In this supporting construction a second test specimen was embedded, which is not subject of this test report. Between the two test specimens a stripe of the supporting construction with a

width of approx. 390 mm was arranged. There was no interaction within the meaning of EN 1634-1.

2.4 Verification and Sampling

The selection of the test specimen was done by DMT GmbH & Co. KG.

The test specimen was manufactured as prototype in single part production, so there was no sampling out of production.

In EN 1634-1, paragraph 6.6 "Verification and sampling", the following is stated:

When the method of construction precludes a detailed survey of the test specimen, without having to permanently damage it or if it is considered that it will subsequently be impossible to evaluate construction details from a post test examination, then one of two options shall be exercised by the laboratory, either:

a) the laboratory shall request or oversee the manufacture of the doorset or openable window which is to be the subject of the test; or

b) the sponsor shall, at the discretion of the test laboratory, be requested to supply an additional test specimen or that part of the test specimen which cannot be verified (e.g. door leaf) to the number required for testing; the laboratory shall then choose freely which of these shall be submitted to the test and which shall be used to verify the construction.

The construction to be tested was a construction which admits no detailed inspection during the installation of the test specimen and after the fire test. For this reason a second test specimen for the door leaf was delivered by the sponsor and option b) was applied by DMT GmbH & Co. KG.

There was no possibility to choose the installed hardware according to option b), as only the door leaf but not the hardware it was delivered twice.

The sponsor provided DMT GmbH & Co. KG prior to the test a detailed description and construction drawings on which base a detailed inspection of the test specimen was performed prior to and after the test and the correctness of the provided information could be confirmed.

Further information of official sampling of the glass used at the fire test as also of other parts of the test specimen are not presented to DMT GmbH & Co. KG resp. are unknown.

DMT GmbH & Co. KG was not involved in the selection of samplings out of production.

3 Test requirements and preparation

3.1 Test standards

EN 1363-1:2020 "Fire resistance tests - Part 1: General Requirements"

EN 1363-2:1999 "Fire resistance tests - Part 2: Alternative and additional procedures"

EN 1634-1:2014+A1:2018 "Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware – Part 1: Fire resistance test for door and shutter assemblies and openable windows"

EN 13501-2:2016 "Fire classification of construction products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services"

EN 16034:2014 "Pedestrian doorsets, industrial, commercial, garage doors and openable windows – Product standard, performance characteristics – Fire resistance and/or smoke control characteristics"

EN 15269-3:2012 "Extended application of test results for fire resistance and/or smoke control for door, shutters and openable window assemblies, including their elements of building hardware - Part 3: Fire resistance of hinged and pivoted timber doorsets and openable timber framed windows"

Please note: The above stated standards conform to the german standards DIN EN.

3.2 Selection of the exposed side to the fire

The door construction was tested from the opening face / opening into the furnace.

The test is part of a test series, the selection of the fire exposed side results out of context of the test series.

The selection of the fire exposed side was made on customer's request.

3.3 Used test equipment

The test equipment was used according to the list of testing instruments used at DMT Test Body for Fire Protection Lathen.

3.4 Shakedown conditioning
(according to EN 16034:2014, Annex A, paragraph A.2.3)

A test of the mechanical conditioning by filling material losing height was not performed, as the insulating material or heat-absorbing materials used were not of any friable or crumbly materials.

3.5 Operability test
(according to EN 16034:2014, Annex A, paragraph A.2.2)

Prior to being mounted on the test furnace, the sample to be fire tested was checked for operability in the fire restraint frame by operating the leaf from the fully closed position to an opening of minimum 90° and back to fully closed for 25 cycles. The opening process was done manually, the closing process by the closing device. The functionality was ensured.

3.6 Self-closing for doorsets or openable windows fitted without door coordinating devices
(according to EN 16034:2014, Annex A, paragraph A.4.1)

Following the test according to 3.5 the door leaf was opened to (10 ± 2)°; this state was maintained for (20 ± 2) s and released without push. It was ensured that the leaf returned to the closed position.

3.7 Ability to release
(according to EN 16034:2014, paragraph 5.3)

To verify the ability to release the door leaf was opened three consecutive times up to 90° and hold in the opened position by the mobile hold open device of DMT GmbH & Co. KG. The release happened by simulating a fire signal (cut off main powers). The closing via the closing device into the closed and latched position was ensured. The ability to release was ensured.

3.8 Retention force measurement
(according to EN 1634-1:2014+A1:2018, paragraph 10.1.3)

The measurement of the forces of opening and closing, measured at a distance of 100 mm from the closed position, resulted in a value of approx. 38 N with a distance of 940 mm from the centre of the hinges.

Prior to the beginning of the test the closing forces were reversed.

3.9 Gap measurement
(according to EN 1634-1:2014+A1:2018, paragraph 10.1.2)

The primary gap width of the functional joints measured prior to the test is deposited at DMT GmbH & Co. KG, as in this test report only the building hardware of BUVA homecare systemen is described.

3.10 Final settings
(according to EN 1634-1:2014+A1:2018, paragraph 10.1.4)

Prior to the test for fire resistance the fire resisting doorset was submitted to a final closing procedure where the leaf was opened for approx. 300 mm and then closed again manually.

The door leaf was latched by the main lock but not locked. The key was removed.

3.11 Setup of furnace thermocouples

The furnace was exposed to flames according to the heating curve according to EN 1363-1:2020, paragraph 5.1.1. Twelve plate thermometers according to EN 1363-1:2020, paragraph 4.5.1.1, were used to measure the temperature in the furnace. Those 12 furnace thermocouples, used to control the temperature in the furnace, were spread equally, so every single element covered a maximum area of 1.5 m².

3.12 Setup of measuring points for furnace pressure

The tubular measuring points to control the pressure in the furnace according to EN 1363-1:2020, paragraph 4.5.2, are arranged in a way to measure the pressure in the furnace with one element at a height of 500 mm from the notional floor level and one element at 3900 mm. The pressure distribution over the height of the furnace was adjusted and observed according to EN 1363-1:2020, paragraph 5.2, so a pressure of 20 Pa. appears at the top edge of the test specimen.

3.13 Thermocouples on the unexposed side of the test specimen

The temperatures on the unexposed side of the test specimen were measured by a total number of 36 thermocouples according to EN 1363-1, paragraph 4.5.1.2.

The measuring points for measuring the temperature increases - in relation to the initial temperature of the unexposed side of the test specimen - are shown in annex 2.1.

3.14 Radiation measurement on the unexposed side of the test specimen

For measurement of radiation at the fire unexposed side of the test specimen a radiation measuring instrument according to EN 1363-2, paragraph 8.2 was used. The measuring head was positioned in a distance of 1 metre parallel to the surface of the test specimen in the centre of the test specimen since the highest radiation level was expected here.

3.15 Setup of measuring points for deflection

The locations of the measuring points for measuring the deflection of the test specimen are deposited at DMT GmbH & Co. KG, as in this test report only the building hardware of BUVA homecare systemen is described.

3.16 Requirements and deviations

The requirements correspond to the standard requirements. There were no deviations to the test methods resp. test conditions.

4 Test execution and results

The test specimen was put to a fire test under the conditions as specified in EN 1363-1:2020 and EN 1634-1:2014+A1:2018 on 15.05.2020.

The fire exposed side was the opening face / opening into the furnace.

4.1 Measurement of temperature rise

The temperature increases above the initial temperature determined during the fire test on the side of the test specimen facing away from the fire are deposited at DMT GmbH & Co. KG. The temperatures inside the furnace, the deviations of the fire chamber temperatures from the set curve and the ambient temperature are shown in charts in annexes 2.2 to 2.4.

4.2 Measurement of radiation

The results of the maximum radiation measurement are deposited at DMT GmbH & Co. KG, as in this test report only the building hardware of BUVA homecare systemen is described.

4.3 Deflection of the test specimen during fire exposure

The results of the deflection measurements are deposited at DMT GmbH & Co. KG, as in this test report only the building hardware of BUVA homecare systemen is described.

4.4 Observations during the fire test

The whole observations during the fire test are deposited at DMT GmbH & Co. KG, as in this test report only the building hardware of BUVA homecare systemen is described.

Table 1: For hardware fittings relevant observations

Test time	opening face at the fire side / opening into the furnace
13:00	Smoke emission in the area of the door handle as well as from the gap between door leaf and frame on the hinge side at centre height
29:45	A cotton pad is held on the door leaf in the upper right corner. The cotton pad does not ignite, smoulder or discolour. The integrity is all right
34:12	Flames (> 10 s) appear at the upper edge of the bottom door leaf glazing ➔ loss of integrity
34:44	End of test because of the failure of the test specimen

5 Summary of test results and comparison to the requirements of EN 1634-1:2014+A1:2018

The following Table 2 lists the key results of the door design and compares them with the requirements of EN 1634-1 for the requested categories EI_1 30 and EI_2 30 of EN 13501-2:2016.

Table 2: requirements according to EN 1634-1:2014+A1:2018 for fire resisting door assemblies; summary of key results and comparison with the requested categories EI_1 30 and EI_2 30 according to EN 13501-2:2016 door 1

Referring to a standard	Performance criteria	Test results (fire exposed side = opening face / opening into the furnace)			Comparison
Indications according to		Description	Results		of test results with the requirements for classes EI_1 30 and EI_2 30 according to EN 13501-2:2016 see paragraph 6
EN 1634-1 paragraph 11.1	Ensuring of integrity, e.g. avoidance of:	Ignition or smouldering of the cotton pad	no igniting or smouldering of the cotton pad		fulfilled
		Penetration of 6 mm Gap gauge	Gap gauge could not penetrate the test specimen		
		Penetration of 25 mm Gap gauge	Gap gauge could not penetrate the test specimen		
		Sustained flaming > 10 s at the unexposed side	Flames > 10 s at the unexposed side occurred after 34 minutes		
EN 1634-1 paragraph 11.2.3 and 11.2.4 and also 11.2.5	Observance of allowed temperature rise at the fire unexposed side above the initial temperature		classification time (30 min.)	End of test (34 min.)	
	Maximum allowed average value = 140 K	ΔT - mean in K:	354	371	not fulfilled
	Maximum allowed single value = 180 K	ΔT - Max in K.:	360	377	EI_2 not fulfilled
		at measuring point no.:	14	14	
	supplementary procedure Maximum allowed single value = 180 K	ΔT - Max in K:	380	427	EI_1 not fulfilled
		at measuring point no.:	20	20	
	Temperatures of peripheral components (frame) max. allowed value = 360 K (EI_2) max. allowed value = 180 K (EI_1)	Max. temperature increase of peripheral components	23	57	EI_1 fulfilled EI_2 fulfilled
		at measuring point no.:	23	25	
EN 1634-1 paragraph 11.3	max. allowed radiation 15 kW/m² at the fire unexposed side	Radiation in kW/m²	0,62	0,73	fulfilled
EN 1363-1 paragraph 11.4.2	Insulation versus integrity	Integrity	34 min.		fulfilled
EN 1363-1 paragraph 5.6	Ambient temperature max. temperature increase +20 K max. temperature decrease -10 K	ΔT - Max in K:	0		fulfilled
		ΔT - Min in K:	1		
EN 1363-1 paragraph 9.2	Pressure inside furnace during fire exposure	Pressure in furnace at neutral pressure level	see Annex 2.5		
		Pressure furnace at the top edge of test specimen (max.)			

6 Conclusions and recommendations

The test specimen mounted to standard supporting construction with low density rigid with a thickness of 100 mm, as described in annexes 1.1 to 1.9 and section 2, reached the following test results:

Table 3: summary of test results of the fire resisting doorsets with fire exposure of from the opening face / opening into the furnace according to EN 1634-1:2014+A1:2018

Integrity (E):	
Cotton pad	34 minutes was not used until the end of test
Gap gauge 6 mm	34 minutes was not used until the end of test
Gap gauge 25 mm	34 minutes was not used until the end of test
Permanent flames > 10 s	34 minutes
Thermal insulation (I):	
Average temperature	13 minutes
Maximum temperature (supplementary procedure) I_1	15 minutes
Maximum temperature I_2	15 minutes
Radiation (W):	34 minutes
Duration of the test:	34 minutes

The test specimen met the following performance criteria:

Table 4: summary of performance criteria of the fire resisting doorset with fire exposure of from the opening face / opening into the furnace according to EN 1634-1:2014+A1:2018

E - Integrity (permanent flames, cotton pad, gap gauge)	34 minutes
EI_1 – Thermal insulation (supplementary procedure)	13 minutes
EI_2 – Thermal insulation	13 minutes
EW – Radiation	34 minutes

The tested door construction was flamed for 34 minutes. An insulation of 13 minutes was achieved. This was because of the low insulation ability of the installed “EW”-glasses. If the glasses are not taken into account, then there were no flames or temperature excesses up to test minute 34 that would have endangered the insulation criteria (I_1 and I_2). Thus it can be summarized that the tested door hardware **“BUVA MultiFin SB/65/72-2090R DR 1+3 SKG**®, AANGEPASTE sluitkom 6025+ DrR 1+3 SKG***®, BUVA rvs sluitplaat NL BLIND**

v/sluitkom 6025+, BUVA zelfstellende sluitkom InLine+ - SKG®, Dub. cil. 2002/6 + 15 mm SKG**®, Langschilden KT-3500 F1 PC-72 SKG***®, Deurkrukken U-Line 120mm F1 deurdikte, BUVA deurdranger type FD-440 m/vrijloop and BUVA glijarm type FD-494 tbv FD-440"** of the company BUVA homecare systemen did not have a significant negative effect on the behaviour of the fire protection door with regard to the above mentioned performance criteria integrity, insulation and radiation over a period of at least 30 minutes, so the criteria were fulfilled with regard to the door hardware **"BUVA MultiFin SB/65/72-2090R DR 1+3 SKG**®, AANGEPASTE sluitkom 6025+ DrR 1+3 SKG***®, BUVA rvs sluitplaat NL BLIND v/sluitkom 6025+, BUVA zelfstellende sluitkom InLine+ - SKG**®, Dub. cil. 2002/6 + 15 mm SKG**®, Langschilden KT-3500 F1 PC-72 SKG***®, Deurkrukken U-Line 120mm F1 deurdikte, BUVA deurdranger type FD-440 m/vrijloop and BUVA glijarm type FD-494 tbv FD-440"**.

7 Field of direct application of test results according to EN 1634-1:2014+A1:2018 paragraph 13

As in this test report only the test results of the building hardware "BUVA MultiFin SB/65/72-2090R DR 1+3 SKG**®, AANGEPASTE sluitkom 6025+ DrR 1+3 SKG***®, BUVA rvs sluitplaat NL BLIND v/sluitkom 6025+, BUVA zelfstellende sluitkom InLine+ - SKG**®, Dub. cil. 2002/6 + 15 mm SKG**®, Langschilden KT-3500 F1 PC-72 SKG***®, Deurkrukken U-Line 120mm F1 deurdikte, BUVA deurdranger type FD-440 m/vrijloop and BUVA glijarm type FD-494 tbv FD-440" the field of direct application according to EN 1634-1 is not applicable.

8 General statement

This test report details the method of construction, the test conditions and the results obtained when the specific element of construction described herein was tested following the procedure outlined in EN 1634-1, EN 1363-1, and - where appropriate - EN 1363-2. Any significant deviation with respect to size, construction 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 fire resistance testing and the 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.

Lathen, 19.08.2020

Kanjahn
(Head of test lab)

DMT-Prüfstelle für Brandschutz DMT

Mertens
(case worker)

Annotations
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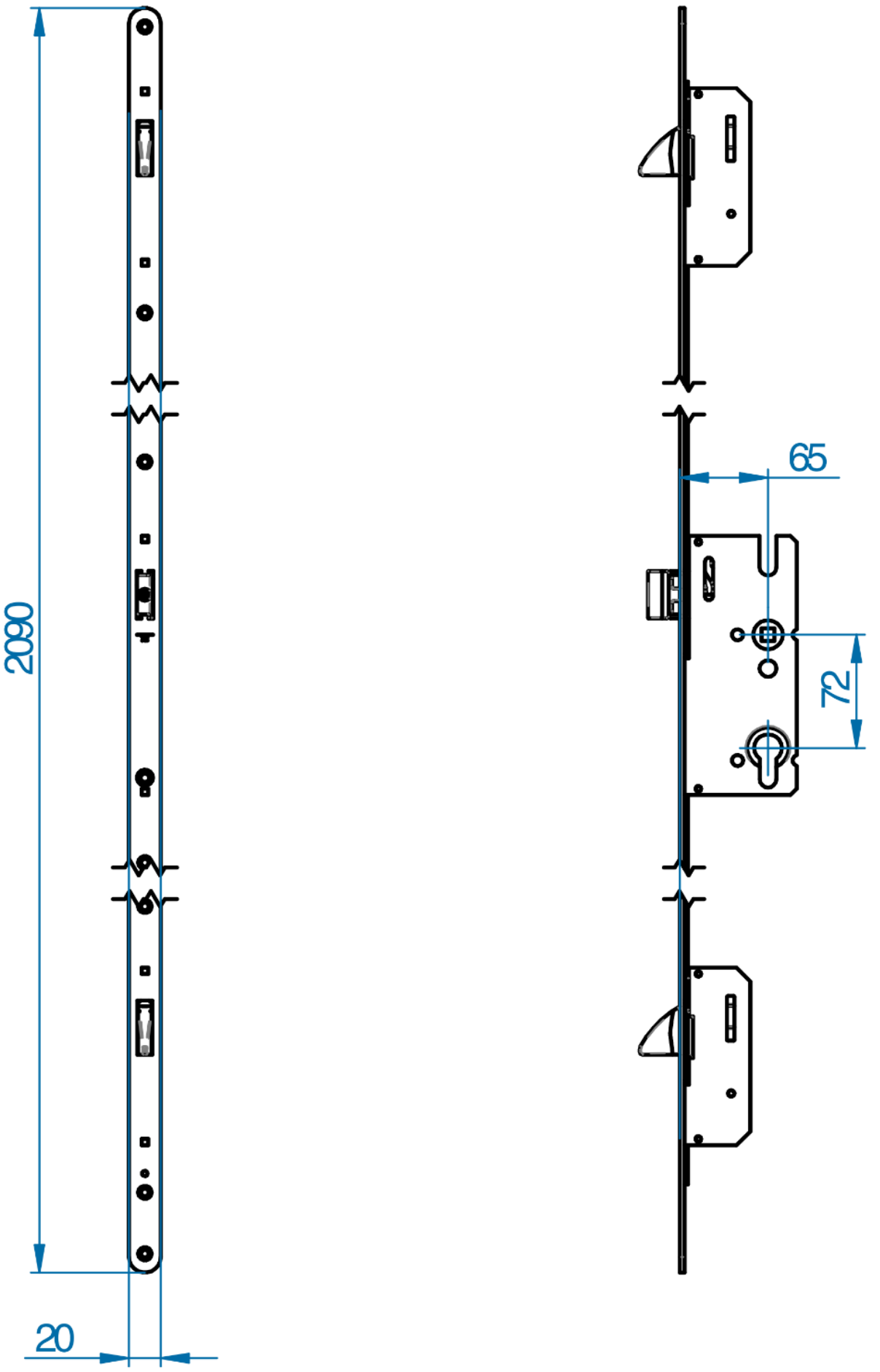
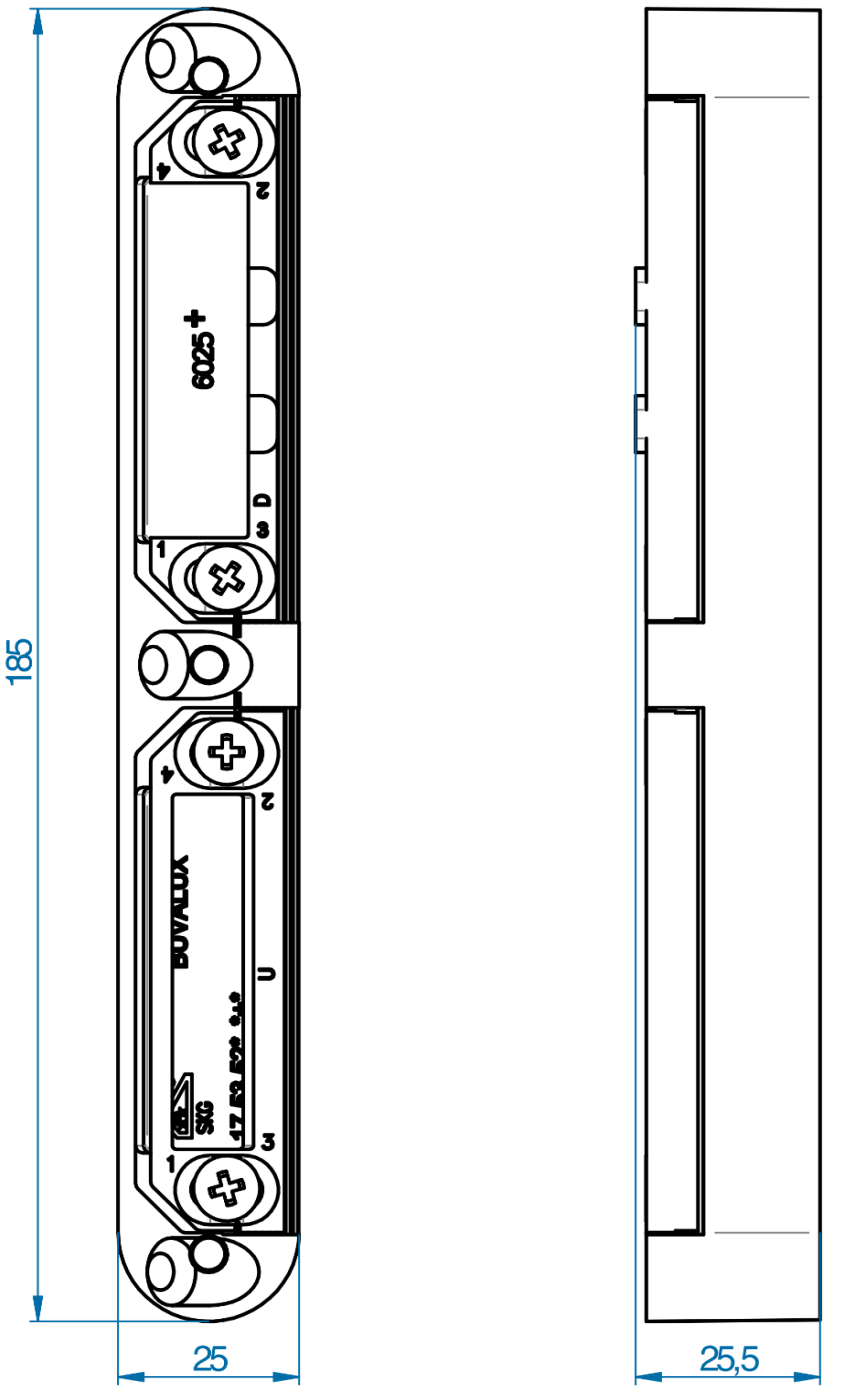
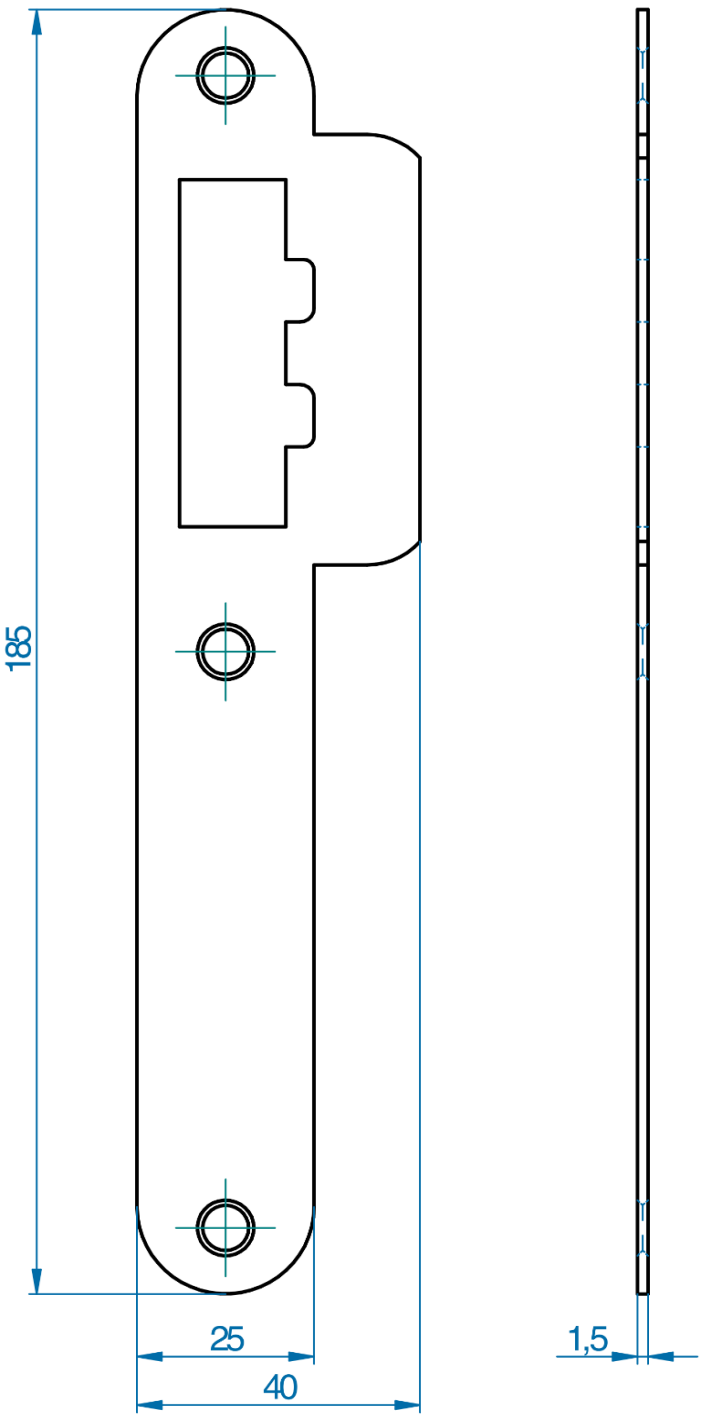
The test material has been used up.



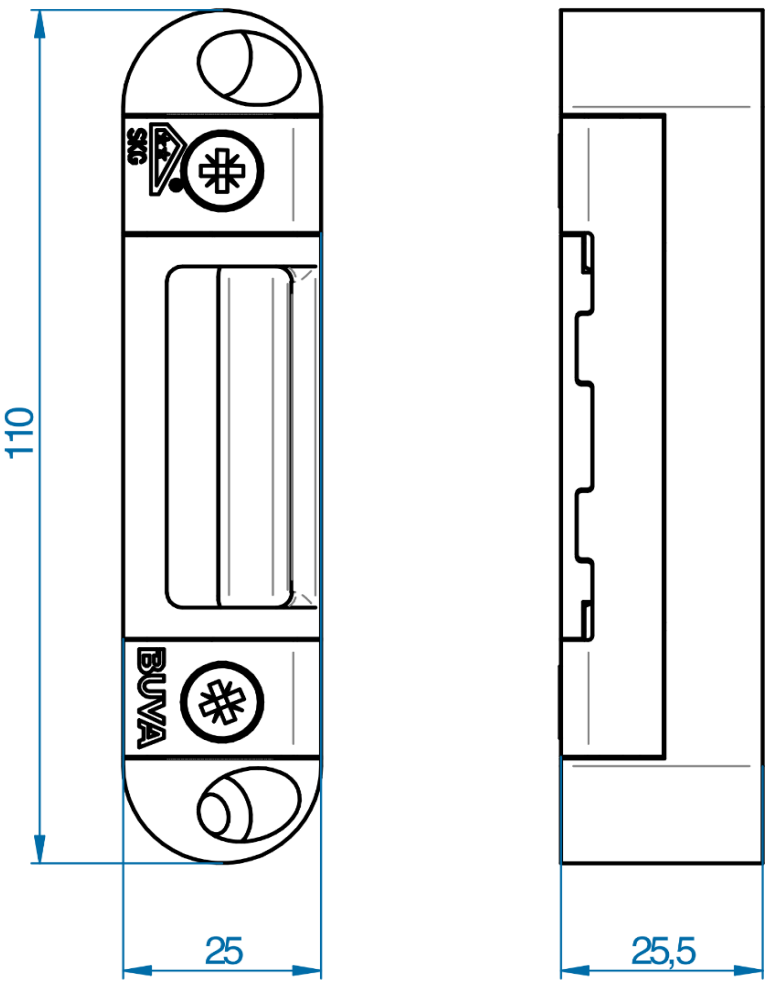
BUVA MultiFin SB/65/72-2090R DR 1+3 SKG**®	annex 1.1 of
DMT GmbH & Co. KG Plant and Product Safety Test Body for Fire Protection	test report no. DMT-DO-50-821



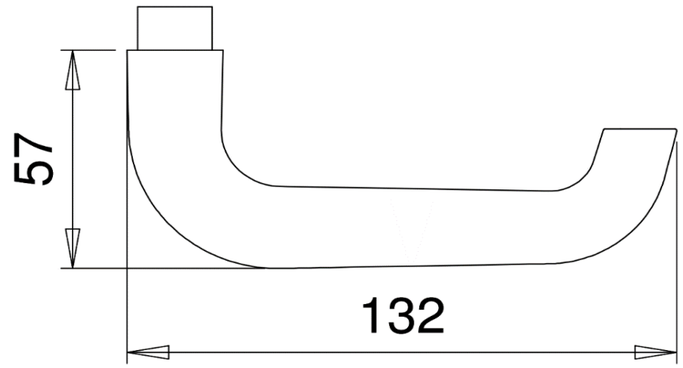
AANGEPASTE sluitkom 6025+ DrR 1+3 SKG*®**	annex 1.2 of
DMT GmbH & Co. KG Plant and Product Safety Test Body for Fire Protection	test report no. DMT-DO-50-821



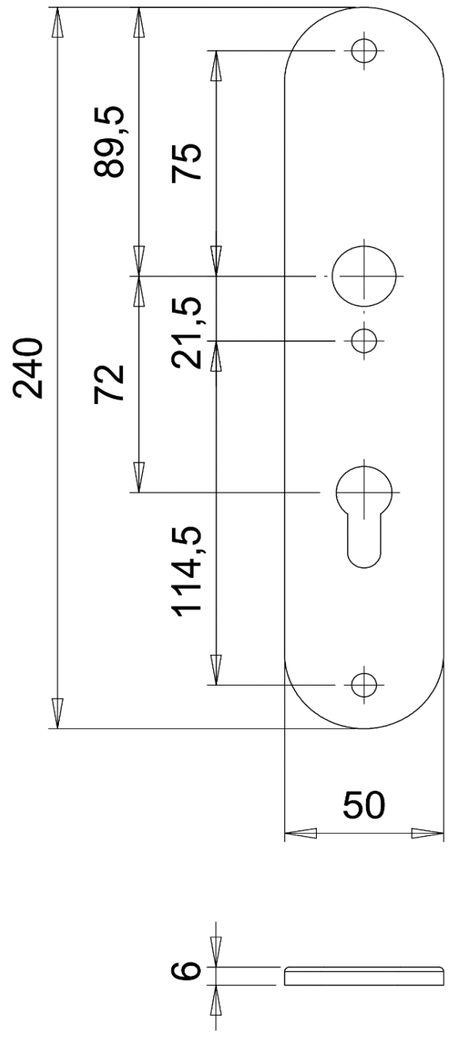
BUVA rvs sluitplaat NL BLIND v/sluitkom 6025+	annex 1.3 of
DMT GmbH & Co. KG Plant and Product Safety Test Body for Fire Protection	test report no. DMT-DO-50-821



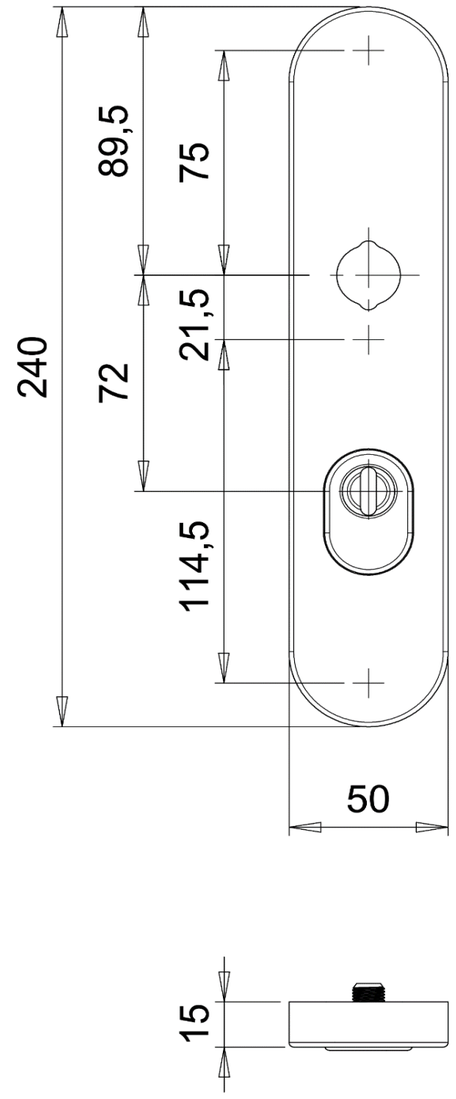
BUVA zelfstellende sluitkom InLine+ - SKG®**	annex 1.4 of
DMT GmbH & Co. KG Plant and Product Safety Test Body for Fire Protection	test report no. DMT-DO-50-821



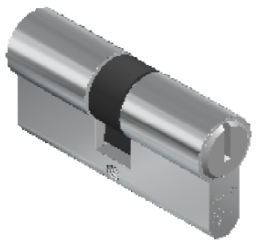
Deurkrukken U-Line 120mm F1 deurdikte	annex 1.5 of
DMT GmbH & Co. KG Plant and Product Safety Test Body for Fire Protection	test report no. DMT-DO-50-821

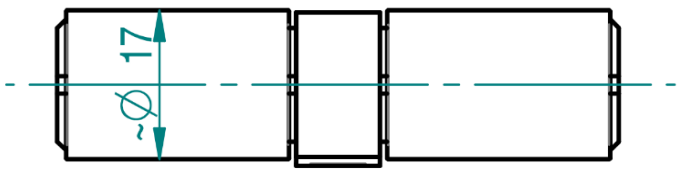


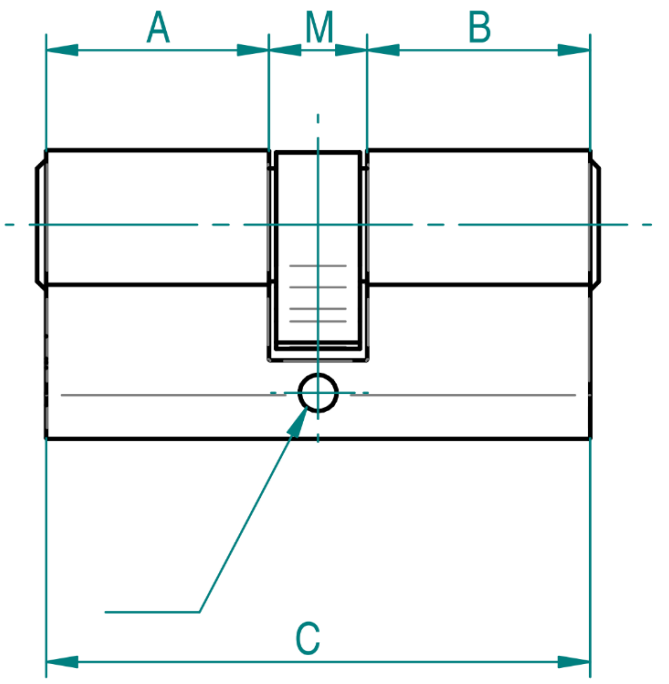
Langschilden KT-3500 F1 PC-72 SKG***® (dd 54) (inside)	annex 1.6 of
DMT GmbH & Co. KG Plant and Product Safety Test Body for Fire Protection	test report no. DMT-DO-50-821

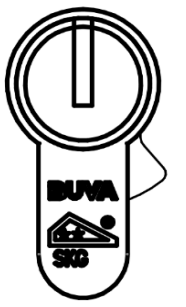


Langschilden KT-3500 F1 PC-72 SKG*® (dd 54) (outside)**	annex 1.7 of
DMT GmbH & Co. KG Plant and Product Safety Test Body for Fire Protection	test report no. DMT-DO-50-821





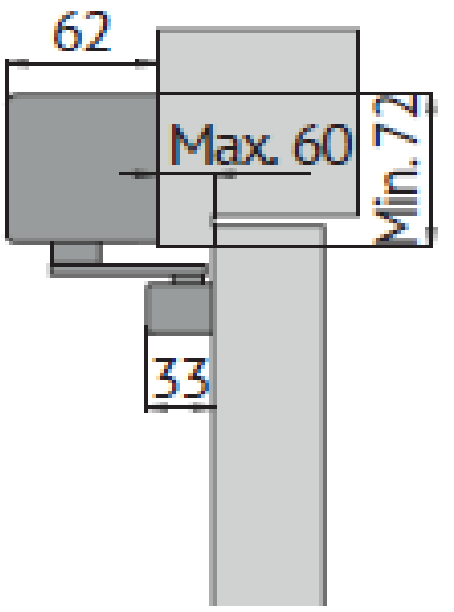


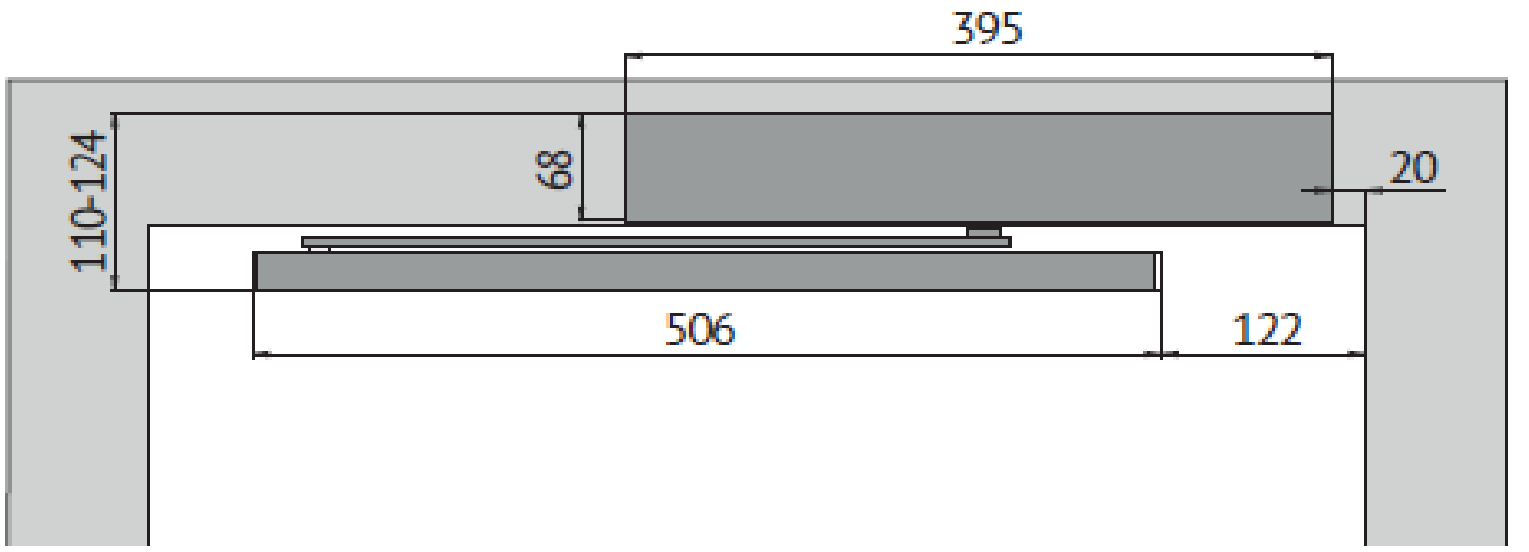


opm.:
A= buitenzijde
M= meenemer
B= binnenzijde
C= totaallengte

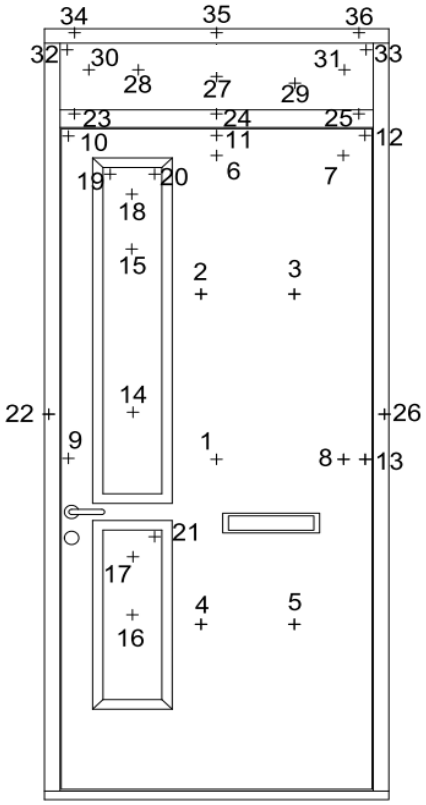
tested dimensions:

Dubbele cilinder (hele cilinder)					
benaming	A	M	B	C	opm.
standaard	25,5	10,5	25,5	61,5	
verlengd +5	30,5	10,5	25,5	66,5	
verlengd +10	35,5	10,5	25,5	71,5	
verlengd +15	40,5	10,5	25,5	76,5	
verlengd +20	45,5	10,5	25,5	81,5	
verlengd +25	50,5	10,5	25,5	86,5	
verlengd +30	55,5	10,5	25,5	91,5	
verlengd +35	60,5	10,5	25,5	96,5	
verlengd +5/ 5	30,5	10,5	30,5	71,5	
verlengd +5/ 10	30,5	10,5	35,5	76,5	
verlengd +5/ 15	30,5	10,5	40,5	81,5	
verlengd +5/ 20	30,5	10,5	45,5	86,5	
verlengd +5/ 25	30,5	10,5	50,5	91,5	
verlengd +10/ 10	35,5	10,5	35,5	81,5	
verlengd +10/ 15	35,5	10,5	41,5	86,5	
verlengd +10/ 20	35,5	10,5	46,5	91,5	
verlengd +10/ 25	35,5	10,5	51,5	96,5	
verlengd +15/ 15	40,5	10,5	40,5	91,5	
verlengd +15/ 20	40,5	10,5	45,5	96,5	
verlengd +20/ 20	45,5	10,5	45,5	101,5	

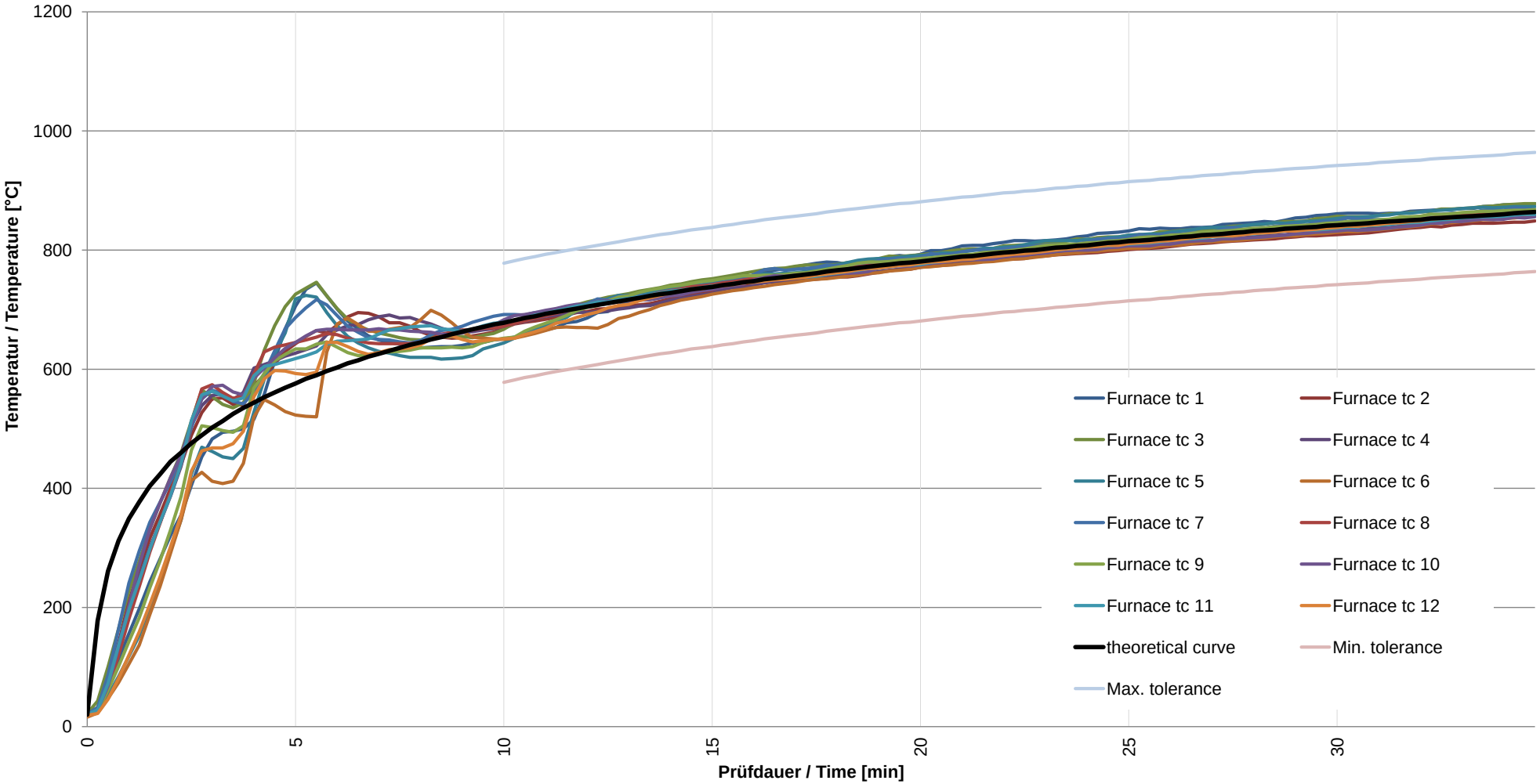




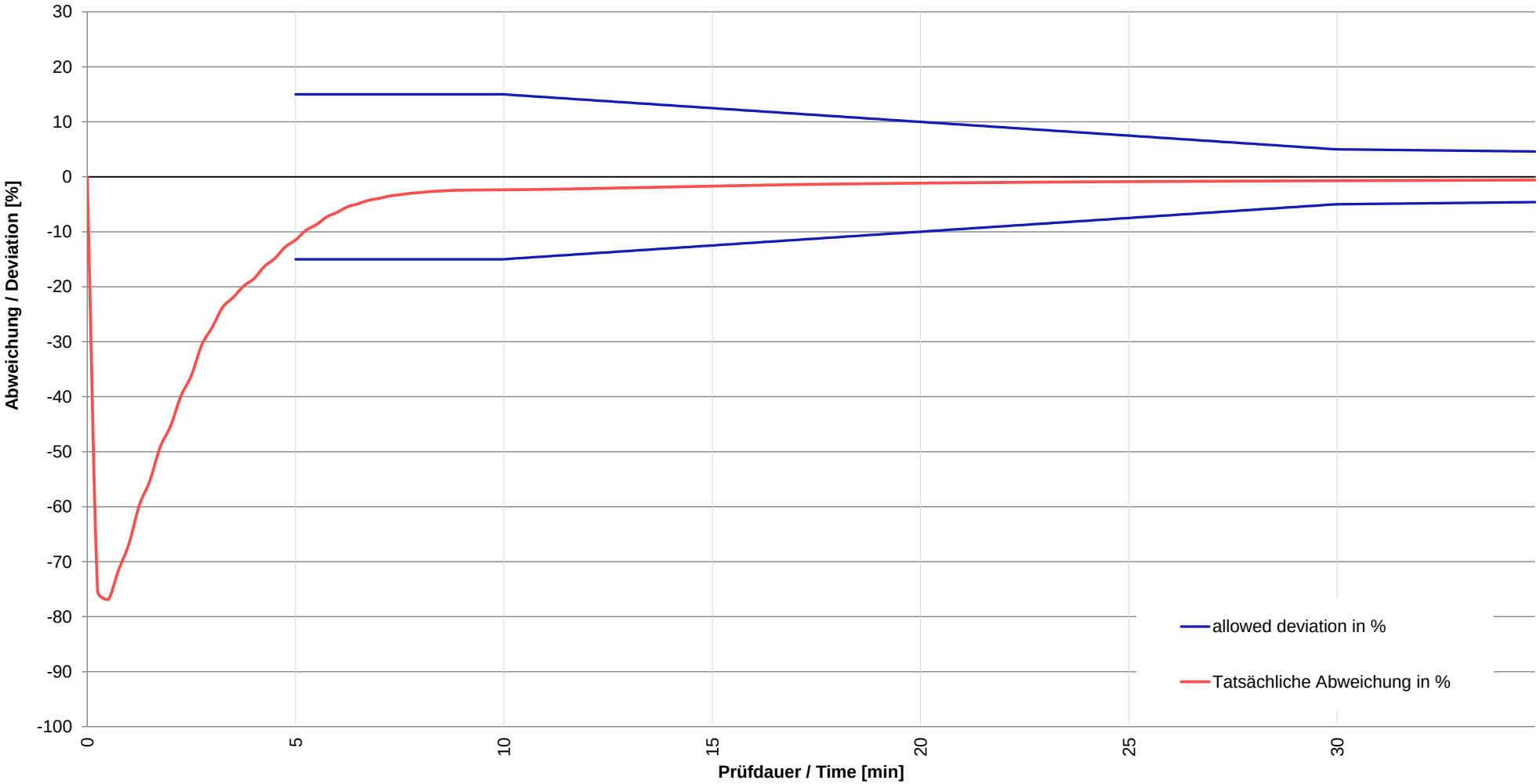
BUVA deurdranger type FD-440 m/vrijloop and BUVA glijarm type FD-494 tbv FD-440	annex 1.9 of
DMT GmbH & Co. KG Plant and Product Safety Test Body for Fire Protection	test report no. DMT-DO-50-821



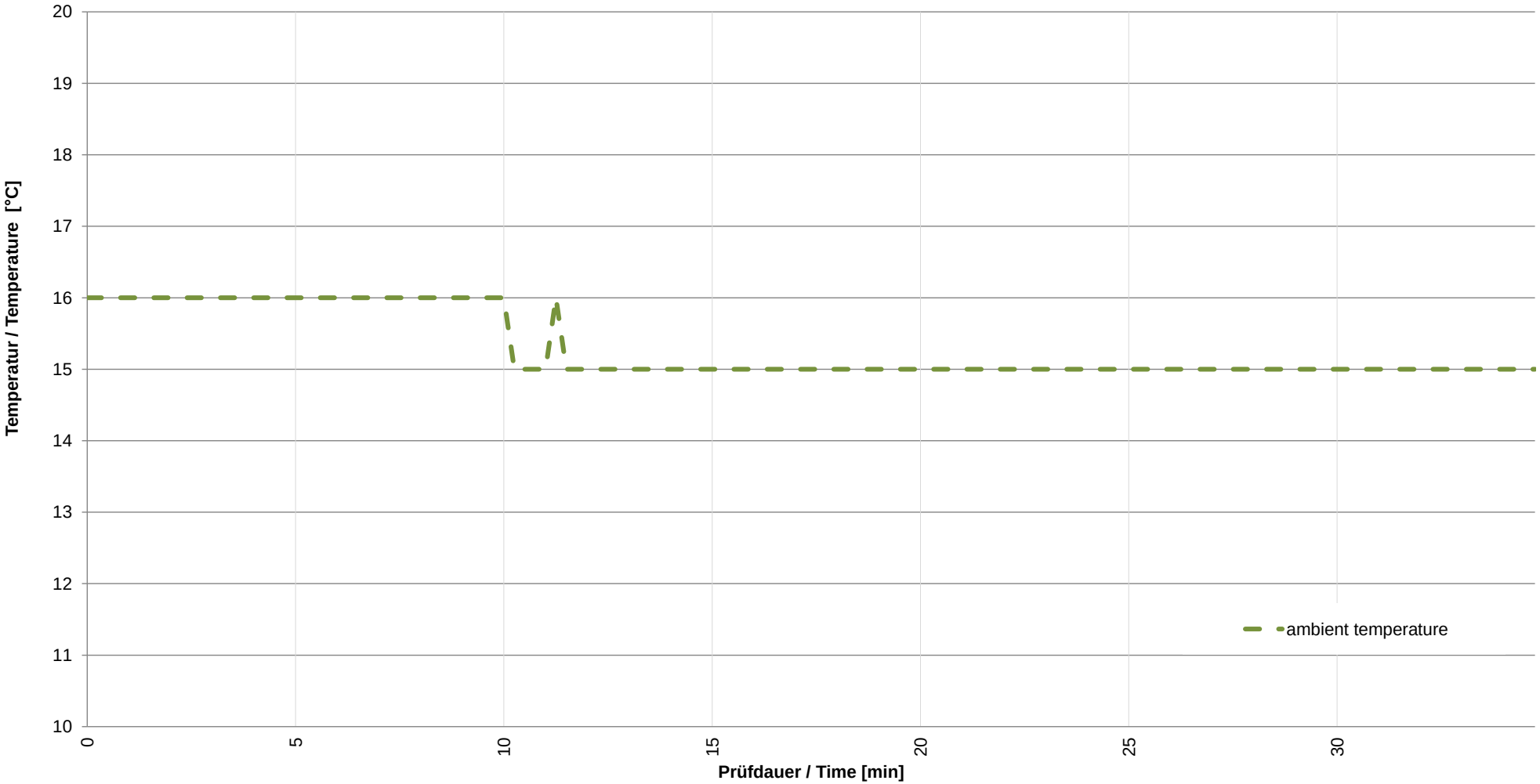
Thermocouples no.	Title	Max. temp. Increase [K]	standard
1 - 5	average value door leaf	140	EN 1634-1
6 - 8	10 cm line door leaf	180 EI_2	EN 1634-1
9 - 13	2,5 cm line door leaf	180 EI_1	EN 1634-1
14 - 16	average value door leaf glazing	140	EN 1634-1
17 - 18	10 cm line door leaf glazing	180 EI_2	EN 1634-1
19 - 21	2,5 cm line door leaf glazing	180 EI_1	EN 1634-1
22 - 26	frame 1,5 cm from outer edge	180 EI_1 / 360 EI_2	EN 1634-1
27 - 29	average value top panel	140	EN 1634-1
30 - 31	10 cm line top panel	180 EI_2	EN 1634-1
32 - 33	2,5 cm line top panel	180 EI_1	EN 1634-1
34 - 36	frame	180	EN 1634-1



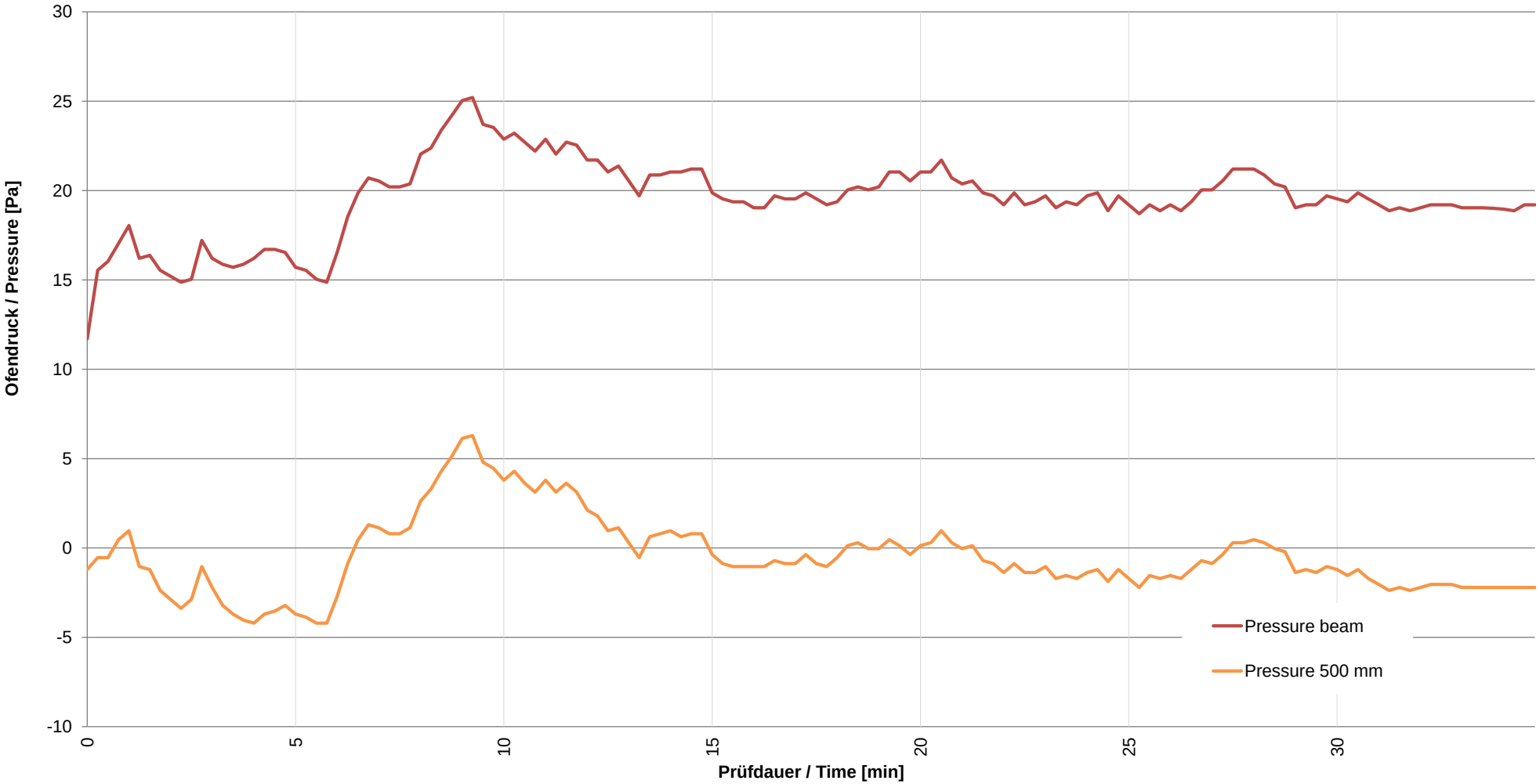
Heating curve	annex 2.2 of
DMT GmbH & Co. KG Plant and Product Safety Test Body for fire protection	test report no. DMT-DO-50-821



Heating curve, tolerances	annex 2.3 of
DMT GmbH & Co. KG Plant and Product Safety Test Body for fire protection	test report no. DMT-DO-50-821



Ambient temperature	annex 2.4 of
DMT GmbH & Co. KG Plant and Product Safety Test Body for fire protection	test report no. DMT-DO-50-821



Pressure during test procedure	annex 2.5 of
DMT GmbH & Co. KG Plant and Product Safety Test Body for fire protection	test report no. DMT-DO-50-821