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Flokk AS

Drammensveien 145
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Fürth, September 15/2021

TEST REPORT No. FUHLFP2021-02042-2

Date sample received: March 04/2021

Period of testing: March 04/2021 – September 15/2021

Technical Director: Kerstin Scharrer

Test Item: Office work chair HÅG Capisco, including models:

<u>HÅG Capisco</u>	<u>HÅG Capisco Puls</u>
- 8106	- 8010
- 8107	- 8020
- 8126	
- 8127	

Test: General safety tests to EN 1335-1:2000 and EN 1335-2:2018 to achieve the GS Mark

Determination:

The test sample of “HÅG Capisco –8126 and HÅG Capisco Puls 8106” was submitted for the general safety tests to EN 1335-1:2000 and EN 1335-2:2018, considering the current state of the art.

On the model “HÅG Capisco Puls 8106” test was performed. On the Model “HÅG Capisco –8126” a validation was performed.

These models were selected for testing as they cover all construction features of the whole range.

In summary, the test requirements **were fulfilled**.

Notes:

The accessibility and selection of used materials does not propose a risk in accordance with PAH requirements for GS (see document AfPS GS 2019:01 PAH), and PAH Evaluation Sheet FUHLFP2021-02042-PAH.

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3/11-21



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Product identification:

Test sample:	Office work chair	
Model name:	HÅG Capisco	/HÅG Capisco Puls
Item number:	-8106	- 8010
	-8107	- 8020
	-8126	
	-8127	

Manufacturer:	Flokk AS, Sundveien 201, 7374 Roros, Norway
Number of test samples:	1 sample of 8126 and 8106
Distributor:	Flokk
Delivered on:	04.03.2021
Delivered by:	Flokk

Product documents:

User Guide, Product specification sheet and Product marking

Scope of the investigations:

EN 1335-1:2000, Office furniture - Office work chair –
Part 1: Dimensions - Determination of dimensions

AK 5.3 Möbel dated 2018-09-12

EN 1335-2:2018, Office furniture - Office work chair –
Part 2: Safety requirements

Abbreviations:

* = Test method is not part of the accreditation scope
** = Outsourcing
n.a. = not applicable
n.t. = not tested
n.d. = not determinable (< LoQ)
LoQ = limit of quantification
CS = Combined sample
P = passed
F = failed

Applicability of measurements:

The test results refer only to the objects to be tested. The digital images in this report are intended as supplementary information and are not an integral part of this test report.



Test equipment list

The test equipment list contains a list of the measuring tools used and measuring equipment, gauges, templates and load weights that were used in accordance with the scope of the investigations.

Testing machines and devices as well as any connections that are necessary for the performance of tests are not an integral part of the test equipment list.

The following test equipment were available for testing in accordance with the scope of the investigations:

Clause	Test equipment	Equipment no.
General tests	Ruler	PM_HL_18.321
General tests	Band ruler 3000 mm	PM_HL_18.367
General tests	Calliper	PM_HL_17.044
Strength and durability tests	Load cell 5 kN	PM_HL_18.358
Strength and durability tests	Load cell 5kN	PM_HL_18.359
Strength and durability tests	Load cell 5kN	PM_HL_18.360
Strength and durability tests	Load cell 5 kN	PM_HL_18.361
Strength and durability tests	Load cell 2 kN	PM_HL_18.362
Strength and durability tests	Load cell 5,5 kN	PM_HL_18.363
Strength and durability tests	Seat dummy	PM_HL_18.199
Stability	Pull-Push-Gauge	PM_HL_17.026
Stability	Stability Table	PM_HL_18.107
Stability	Load disc 10 Kg	PM_HL_18.231
Stability	Load disc 10 Kg	PM_HL_18.232
Stability	Load disc 10 Kg	PM_HL_18.233
Stability	Load disc 10 Kg	PM_HL_18.234
Stability	Load disc 10 Kg	PM_HL_18.235
Stability	Load disc (wood)	PM_HL_18.216
Stability	Load disc (wood)	PM_HL_18.217
Stability	Load disc (wood)	PM_HL_18.218
Stability	Load disc (wood)	PM_HL_18.219
Stability	Load disc (wood)	PM_HL_18.220
Stability	Load disc (wood)	PM_HL_18.221
Stability	Load disc (wood)	PM_HL_18.222
Stability	Load disc (wood)	PM_HL_18.223
Stability	Load disc (wood)	PM_HL_18.224
Stability	Load disc (wood)	PM_HL_18.225
Stability	Load disc (wood)	PM_HL_18.226
Stability	Load disc (wood)	PM_HL_18.227
Stability	Load disc (wood)	PM_HL_18.228
Stability	Load disc (wood)	PM_HL_18.229
Loading point template - A-B	Measurement template	PM_HL_18.109
Strength and durability tests	Durability test stand	PM_HL_18.153
Strength and durability tests for castor	Linear axis test stand	PM_HL_18.066



General Testing

Technical characteristics

General dimensions

Model	8126	8106
Depth (mm):	670	670
Height (mm):	930-1070	930-1070
Width (mm):	580	580
Net weight (kg):	15.0	14.0 kg

Brief description of the sample

Office work chair, model range "HAG Capisco" with two different types of seat; headrest optional, aluminum or plastic base optional, hard castors (type "H") or soft castors (type "W") optional

- Seat height adjustable by means of gas spring from S.C. Stabilus Romania S.R.L.
- seat mechanism made of steel with tilt function, lockable in front and rear inclined position by hand lever, tilt resistance of mechanism adjustable by rotary handle
- 80 mm sliding seat adjustable by means of a hand lever
- saddle seat: seat mechanism slideable mounted on metal frame, metal frame made of 2.0 mm steel with welded connections, seat shell made of plywood (thickness 9 mm, 7 layers), seat shell covered with plastic base, seat shell mounted on metal frame with 4 screws M6 x 15 mm
- backrest support made of aluminum cast, backrest support mounted on seat mechanism with one screw M8 x 35 mm
- aluminum or plastic base optional, plastic base aluminum base" made of aluminum
- 5 break unloaded twin wheel swivel castors type "W" or "H" optional, with a diameter of 50 mm,
- marking of castors: none
- castor manufacturer: Emilsider (EMI PAT)



Showcase of the Models:

8106



Classic saddle seat

8107



Classic saddle seat
& headrest

8126



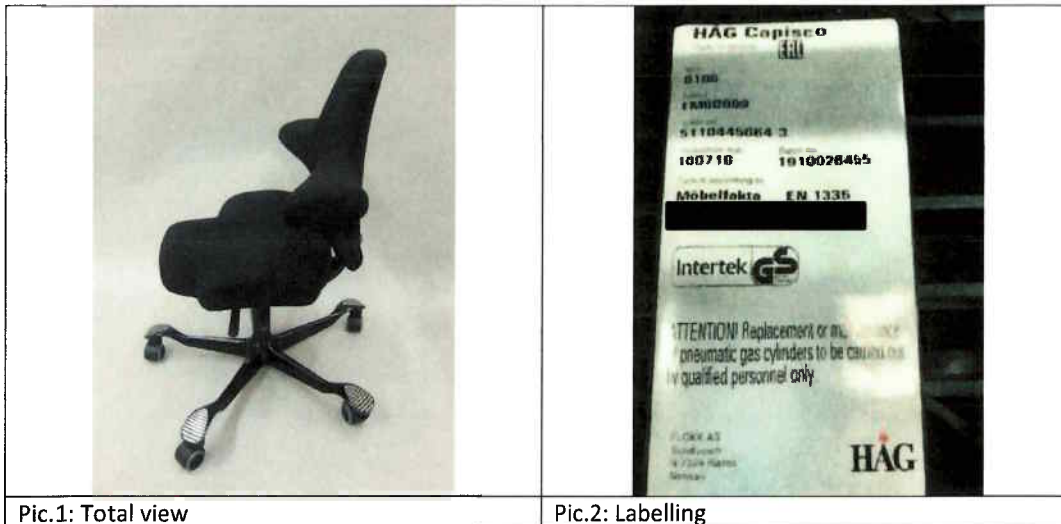
Rounded seat

8127



Rounded seat &
headrest

Photo documentation – mod.8106



Pic.1: Total view

Pic.2: Labelling

Photo documentation – mod.8126



Table 1: Measurement table for Office work chair to EN 1335-1:2000 for the Model 8106

Dimensions	Symbol	Adjustability	Type A				Actual value (in mm)	Results
			allowed (-)	Min. [a]	Max. [a]	allowed (+)		
Office work chair								
Seat height ^{b)}	[a]	adjustable	yes	400	510	yes	400-539	P
		adjustable range	no	120	+	yes	139	P
Seat depth	[b]	fixed		./.	./.		./.	./.
		adjustable	yes	400	420	yes	382 – 464	P
		adjustable range	no	50	+	yes	82	P
Depth of seat surface	[c]		no	380	+	yes	410	P
Seat width	[d]		no	400	+	yes	485	P
Inclination of seat surface	[e]	fixed		./.	./.		./.	./.
		adjustable	yes	-2	-7	yes	-2° to -17,7°	P
		adjustable range	no	6°	+	no	15,7°	P
Height of the back Supporting point "S" above the seat surface	[f]	fixed		./.	./.		./.	./.
		adjustable	yes	170	220	yes	134 – 226	P
		adjustable range	no	50	+	yes	92	P
Height of the back pad - adjustable in height - non-adjustable in height	[g]		no no	220 260	+	yes yes	489 ./.	P ./.
Height of the upper edge of the back rest above the seat surface	[h]		no	360	+	yes	402 – 494	P
Back rest width	[i]		no	360	+	yes	595	P
Horizontal radius of the back rest	[k]		no	400	+	yes	> 400	P
Back rest inclination	[l]	adjustable range	no	15°	+	yes	15,4	P
Length of arm rest	[n]		no	200	+	yes	./.	./.
Width of arm rest ^{c)}	[o]		no	40	+	yes	./.	./.
Height of arm rest above the Seat	[p]	fixed	no	200	250	no	./.	./.
		adjustable	yes	200	250	yes	./.	./.
Distance from the front of the arm rest to the front edge of the seat surface ^{d)}	[q]		no	100	+	yes	./.	./.
Clear width between the arm rests ^{e)}	[r]		no	460	510	no	./.	./.
Maximum offset of the underframe (anti-stumbling –dimension)	[s]		yes	+	365 f)	no	386	P ^{h)}
Stability dimension ^{h)}	[t]		no	195	+	yes	254	P

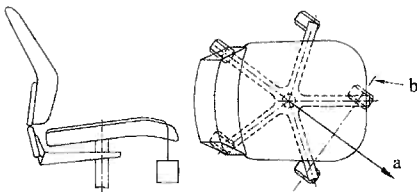
- a) For adjustable functions the Min. and Max. values must be obtained.
b) The minimum range of adjustment is suitable for working surface heights between at least 680 mm and 780 mm. For some part of the user group a foot rest is required.
c) The requirement applies over the minimum value n.
d) The requirement applies from a height of 170 mm above point "A".
e) The requirement applies to ¾ of the seat depth b (Measured from the front edge of the seat) with the back rest in its foremost position.
f) If swivel castors are fitted the requirement is 415 mm.

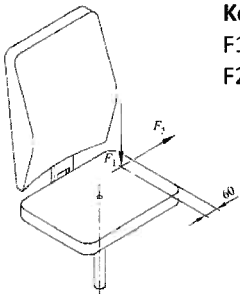
REMARK:
according to "AK 5.3 Möbel dated 2018-09-12" the measurements can be taken over from EN 1335-1:2000 for a period of three years after publication.
Start of the transition period: with the date of publication. DATE EN 1335-1:2020

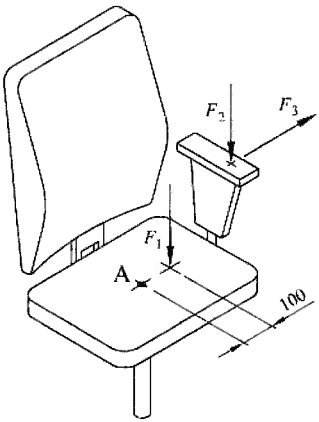


Test characteristics/requirements	Test parameters/results	Verdict
<p>Safety requirements in accordance to EN 1335-2</p> <p>General design requirements</p> <p>Corners and edges, trapping, pinching and shearing</p> <p>The chair shall be so designed as to minimise the risk of injury to the user.</p> <p>All parts of the chair with which the user comes into contact during intended use, shall be so designed that physical injury and damage to property are avoided.</p> <p>These requirements are met when:</p> <p>a) the safety distance of accessible movable parts is either ≤ 8 mm or ≥ 25 mm in any position during movement;</p> <p>b) accessible corners are rounded with minimum 2 mm radius;</p> <p>c) the edges of the seat, back rest and arm rests which are in contact with the user when sitting in the chair are rounded with minimum 2 mm radius;</p> <p>d) the edges of handles are rounded with minimum 2 mm radius in the direction of the force applied;</p> <p>e) all other edges are free from burrs and rounded or chamfered;</p> <p>f) the ends of accessible hollow components are closed or capped.</p> <p>Adjusting devices</p> <p>Movable and adjustable parts shall be designed so that injuries and inadvertent operation are avoided.</p> <p>It shall be possible to operate the adjusting devices from sitting position in the chair.</p> <p>Connections</p> <p>It shall not be possible for any load bearing part of the chair to come loose unintentionally.</p>	<p>no risk of injury</p> <p>fulfilled</p> <p>no distances between moveable parts of ≤ 8 mm or ≥ 25 mm</p> <p>accessible corners are rounded with 2 mm</p> <p>accessible edges are rounded with 2 mm</p> <p>no handle</p> <p>all other edges free of burrs</p> <p>no free open ends</p> <p>Injuries are avoided during operation</p> <p>Possibility given</p> <p>no load bearing parts possible to become loose unintentionally</p>	<p>P</p> <p>P</p> <p>P</p> <p>P</p> <p>n.a.</p> <p>P</p> <p>P</p> <p>n.a.</p> <p>P</p> <p>P</p>



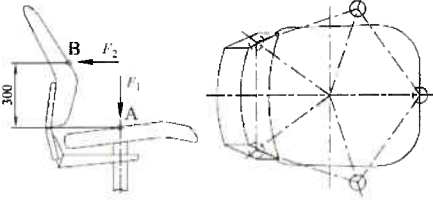
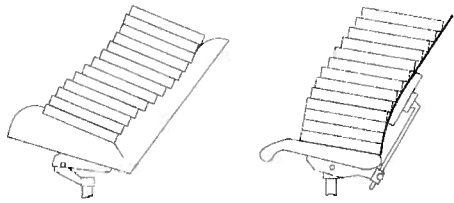
Test characteristics/requirements	Test parameters/results	Verdict
<p>Avoidance of soiling</p> <p>All parts which are lubricated to assist sliding (greasing, lubricating, etc.) shall be designed to protect users from lubricant stains when in normal use.</p> <p>Stability during use</p> <p>The chair shall not overbalance under the following conditions:</p> <p>a) by pressing down on the front edge of the seat surface in the most adverse position;</p> <p>b) by leaning out over the arm rests;</p> <p>c) by leaning against the back rest;</p> <p>d) by sitting on the front edge.</p> <p>Requirement a) is fulfilled if the chair does not overbalance when tested according to front edge overturning.</p> <p>Front edge overturning</p> <p>Do not position the chair with the stops against the supporting points (3.5). Fix the strap (5.8) to the chair as shown in Figure 7, i.e. the force is applied at the point on the front edge that is furthest from the axis of rotation, and allow the mass M1 to hang freely (see Figure 7).</p>  <p>a position of the strap on the seat surface b the tilting axis, castors in the most adverse position</p> <p>Figure 7 — Front edge overturning</p>	<p>no staining of lubricants</p> <p>no overbalancing</p> <p>no overbalancing</p> <p>no overbalancing</p> <p>no overbalancing</p> <p>Required: ≥ 30 kg Results: no overbalancing by 50 kg</p>	<p>P</p> <p>P</p> <p>P</p> <p>P</p> <p>P</p>

Test characteristics/requirements	Test parameters/results	Verdict
<p>Sideways overturning for chairs without armrests</p> <p>Position the chair with two adjacent supporting points on one side against the stops.</p> <p>Apply by means of the stability loading device a vertical force F_1 acting 60 mm from the side edge of the load bearing structure of the seat at those points most likely to result in overturning. Apply for at least 5 s a horizontal sideways force F_2 outwards from the point on the seat surface where the vertical force is applied, (see Figure 9).</p> <div data-bbox="443 801 858 1093" style="text-align: center;"> <p>Key F_1 vertical force F_2 horizontal force</p>  </div> <p>Figure 9 — Sideways overturning for chairs without armrests</p>	<p>No overbalancing by $F_1 = 600 \text{ N}$ $F_2 = 91 \text{ N}$</p>	<p>P.</p>

Test characteristics/requirements	Test parameters/results	Verdict
<p>Sideways overturning for chairs with armrests</p> <p>Position the chair with two adjacent supporting points on one side against the stops.</p> <p>Apply by means of the stability loading device a vertical force F_1 acting at a point 100 mm from the fore and aft centre line of the seat at the side where the supporting points are restrained (see Figure 10) and between 175 mm and 250 mm forward of the rear edge of the seat.</p> <p>Apply a vertical downward force F_2 acting at points on the arm rest which is on the same side as the restrained supporting points up to a maximum 40 mm inwards from the outer edge of the upper surface of the arm rest, but not beyond the centre of the arm rest, and at the most adverse position along its length. Apply a horizontal sideways force F_3 outwards from the same point for at least 5 s (see Figure 10).</p> <p style="text-align: right;">Dimensions in millimetres</p>  <p>Key A seat loading point F_1 vertical force F_2 vertical force F_3 horizontal force</p> <p>Figure 10 — Sideways overturning for chairs with armrests</p>	<p>No overbalancing by $F_1 = 250 \text{ N}$ $F_2 = 350 \text{ N}$ $F_3 \geq 20 \text{ N}$</p>	<p>n.a.</p>

Test characteristics/requirements	Test parameters/results	Verdict
<p>The unloaded chair shall not roll unintentionally.</p> <p>This requirement is met when:</p> <p>a) the castors are of identical construction;</p> <p>b) the rolling resistance is ≥ 12 N when tested according to Rolling resistance of the unloaded chair.</p> <p>Rolling resistance of the unloaded chair</p> <p>The chair shall be placed on the test surface and shall be pushed or pulled over a distance of at least 550 mm. A speed of (50 ± 5) mm/s shall be maintained over the measuring distance. The force shall be applied at a height of (200 ± 50) mm above the test surface.</p> <p>Record the force used to push or to pull the chair over the distance from 250 mm to 500 mm as the rolling resistance.</p> <p>Rearwards overturning for chairs without back rest inclination</p> <p>Position the chair with two adjacent supporting points on the back against the stops. When an independent lumbar adjustment is fitted it shall be set in the most adverse configuration.</p> <p>A vertical force F1 shall be applied at point "A" and a horizontal force F2 shall be applied at point "B", (see Figure 11).</p> <p>If the back rest pad is pivoting around a horizontal axis above the height of the seat and is free to move, the horizontal force shall be applied on the axis. If height adjustable, the axis shall be set as close as possible to 300 mm above point "A".</p>	<p>Push and pull force ≥ 14 N</p> <p>See above</p> <p>No overbalancing</p>	<p>P</p> <p>P</p>



Test characteristics/requirements	Test parameters/results	Verdict
 <p>Key</p> <ul style="list-style-type: none"> A seat loading point (6.1) B back loading point (6.2) F₁ vertical force F₂ horizontal force <p>Figure 11 — Rearward overturning for chairs without back rest inclination</p> <p>Rearwards overturning for chairs with adjustable back rest inclination</p> <p>Do not position the chair with the supporting points against the stops. When an independent lumbar adjustment is fitted it shall be set in the most adverse configuration.</p> <p>Load the chair with discs so that the discs are firmly settled against the back rest (see Figure 12). If the height of the stack of discs exceeds the height of the back rest, prevent the upper discs from sliding off by the use of a light support.</p>  <p>Figure 12 — Rearward overturning for chairs with adjustable back rest inclination</p>	<p>No overbalancing by 13 discs</p>	<p>P</p>

Test characteristics/requirements	Test parameters/results	Verdict
<p>Strength and durability</p> <p>The chair shall be constructed to ensure that it does not create a risk of injury to the user of the chair under the following conditions:</p> <p>a) sitting on the seat, both centrally and off-centre;</p> <p>b) moving forward, backwards, and sideways while sitting in the chair;</p> <p>c) leaning over the armrests;</p> <p>d) pressing down on the arm rests while getting up from the chair.</p> <p>These requirements are fulfilled when after the tests specified in Seat front edge static load test, Combined seat and back static load test, Foot rest static load test, Seat and back durability and Armrest durability with the forces and numbers of cycles according to Table 2 of this standard:</p> <p>e) there are no fractures of any member, joint or component, and</p> <p>f) there is no loosening of joints intended to be rigid, and</p> <p>g) no major structural element is significantly deformed and the chair fulfils its functions after removal of the test loads</p> <p>h) after the test in Arm rest downward static load test with the forces and numbers of cycles according to the tables given on the last page, the arm rests shall show no fracture.</p>	<p>no risk of injury</p> <p>fulfilled</p> <p>fulfilled</p> <p>fulfilled</p> <p>fulfilled</p> <p>No fractures</p> <p>No loosening of rigid joints</p> <p>No visible deformation</p> <p>fulfilled</p>	<p>P</p> <p>P</p> <p>P</p> <p>P</p> <p>P</p> <p>P</p> <p>P</p> <p>P</p>



Table 2: Test sequence and parameters

Test	EN 1728	Loading		Verdict
Combined seat and back static load test	7.3	Seat force	1.600 N, 10 times	P
		Back force	560 N, 10 times	P
Seat front edge static load test	7.4	Seat front edge	1.600 N, 10 times	P
Static load test of the footrest	7.8	Footrest	1.300 N, 10 times	P
Seat and back durability	7.9	Step 1: Force, N, at point A Cycles	1.500 120.000	P
		Step 2: Force, N, at point C Force, N, at point B Cycles	1.200 320 80.000	P
		Step 3: Force, N, at point J Force, N, at point E Cycles	1.200 320 20.000	P
		Step 4: Force, N, at point F Force, N, at point H Cycles	1.200 320 20.000	P
		Step 5 ^a : Force, N, at point D and G Cycles	1.100 20.000	P
Armrests durability	7.10	Force, N	400	n.a.
		Cycles	60 000	
Armrest downward static load test – central ^b	7.5	Force, N	750	n.a.
		Cycles	5	
Armrest downward static load test – central ^c		Force, N	900	n.a.
		Cycles	5	
^a In derogation to EN 1728:2012, 7.2.5 and 7.2.8 the loading point D shall be 150 mm to the right of point A and the loading point G shall be 150 mm to the left of point A ^b This test shall be carried out before the stability tests ^c This test shall be carried out after the stability tests				

Table 3: Loads, Masses and Cycles of stability tests

Test description	Loads	Result	Cycles	Verdict
Overturning over the front corner	$M_1 = 30 \text{ kg}$	500 N	1	P
Overturning over the front edge	$F_1 = 600 \text{ N}$ $F_2 = 20 \text{ N}$	$F_2 = 66 \text{ N}$	1	P
Overturning over the front edge for seating with footrest	$F_1 = 600 \text{ N}$ $F_2 = 20 \text{ N}$	--	1	n.a.
Overturning over the side edge for seating without armrests	$F_1 = 600 \text{ N}$ $F_2 = 20 \text{ N}$	$F_2 = 91 \text{ N}$	1	P
Overturning over the side edge for seating with armrests	$F_1 = 250 \text{ N}$ $F_2 = 350 \text{ N}$ $F_3 = 20 \text{ N}$	$F_3 = /$	1	n.a.
Overturning backwards for seating without backrest inclination	$F_1 = 600 \text{ N}$ $F_2 = x$	n.a.	1	n.a.
Overturning backwards for seating with backrest inclination	13 load discs	13 load discs	1	P

Test characteristics/requirements	Test parameters/results	Verdict
<p>Information for use</p> <p>Each chair shall be accompanied by information for use in the language of the country in which it will be delivered to the end user. It shall contain at least the following details:</p> <p>a) Type of the chair: Type Ax, Type A, Type B or Type C;</p> <p>b) Information of the intended field of use;</p> <p>c) Instructions of all adjustment mechanism;</p> <p>d) Assembly instructions if applicable;</p> <p>e) instruction for the care and maintenance of the chair;</p> <p>f) if the chair is fitted with caster, information on the choice of castors in relation to the floor surface.;</p> <p>g) information for chairs with seat height adjustments with energy accumulators that only trained personnel may replace or repair seat height adjustment components with energy accumulators;</p> <p>Marking according to ProdSG § 6</p> <p>Durable marking of product with name and contact address of manufacturer or importer and the product designation.</p>	<p>User guide available</p> <p>Available</p> <p>Available</p> <p>Available</p> <p>Not applicable</p> <p>Product is self-explaining</p> <p>Available</p> <p>Available</p> <p>Available and fulfilled</p>	<p></p> <p>P</p> <p>P</p> <p>P</p> <p>n.a.</p> <p>n.a.</p> <p>P</p> <p>P</p> <p>P</p>





Picture 9: Validation of Model 8126

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END OF REPORT