Best Recycled Plastic Product Winner - 2015

HÅG Capisco

Scandinavian Business Seating

Norway

Massimo Paravidino and Francis Huysman

Co-chairmen EPRO

European Association Of Plastics Recycling & Recovery Organisations

ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025

epd-norge.no
The Norwegian EPD Foundation

Owner of the declaration	Scandinavian Business Seating AS
Program holder	The Norwegian EPD Foundation
Declaration number	NEPD00038E Rev. 1
Issue date	17.12.2014
Valid to	17.12.2019

HÅG Capisco 8105

Product

SCANDINAVIAN BUSINESS SEATING

General information

Product
HÅG Capisco 8105

Owner of the declaration:
Scandinavian Business Seating AS
Contact person: Laura Fouilland
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E-mail: Laura.Fouilland@sbseating.com

Program holder:
The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo
Phone: +47 23 08 80 00
e-mail: post@epd-norge.no

Manufacturer
Scandinavian Business Seating AS

Declaration number:
NEPD00038E Rev. 1

Place of production:
7366 Røros, Norway

This declaration is based on Product Category Rules:
PCR for Seating Solution, NPCR 003 extended version 2013, in accordance with recommendations by the Norwegian EPD Foundation

Management system:
ISO 14001, Certificate No.2010-SKM-AR-1487 from the Accredited Unit: DNV Certification AB, Sweden.

Declared unit:

Org. No:
No 928 902 749

Declared unit with option:

Issue date:
17.12.2014

Functional unit:
Production of one seating solution provided and maintained for a period of 15 years.

Valid to:
17.12.2019

The EPD has been worked out by:
Østfoldforskning AS, Mie Vold

Comparability:
EPD from programmes other than the Norwegian EPD Foundation may not be comparable

Year of study:
2014

Verification:
Independent verification of data and other environmental information has been carried out in accordance with ISO14025, 8.1.3 and 8.1.4

externally ☑ internally ☐

Senior Research Scientist, Cecilia Askham
(Independent verifier approved by EPD Norway)

Approved

Dagfinn Malnes
Managing Director of EPD-Norway

Functional unit:
Production of one seating solution provided and maintained for a period of 15 years.

Key environmental indicators (A1-A3)	Unit	Cradle to gate A1 - A3
Global warming	kg CO_2 eqv	45
Total energy use (CED)	MJ	535
Substances from the REACH Candidate list	*	
Amount of recycled materials	%	50 %

* The product contains no substanses from the REACH Candidate list or the Norwegian priority list

Product

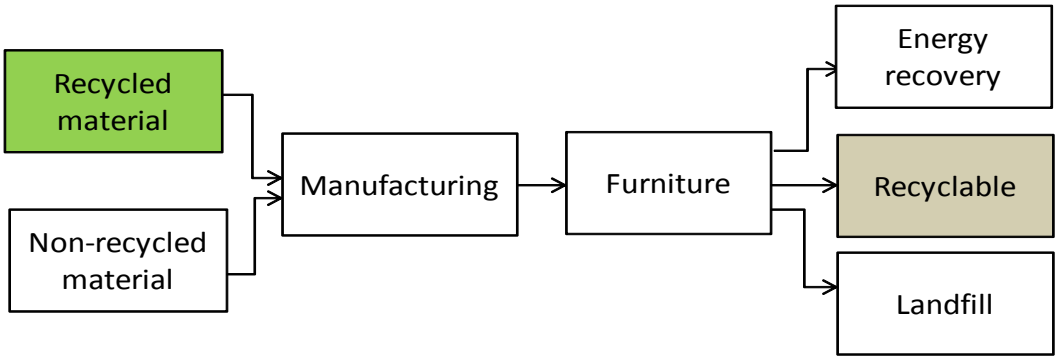
Product description:
HÅG Capisco is inspired by the horseman's saddle and sitting posture. No one sits as actively as a rider in the saddle. When you work sitting on a HÅG Capisco, you'll be inspired to greater freedom of movement, variation and new natural sitting positions. HÅG Capisco allows you to sit as high or low as you want. No other work chair is so well adapted to work stations of different heights. Sit down and adjust it from a normal table height to a semi-standing position. Its award-winning design fits into creative meeting rooms and any other place where you want to work and move in a different way. It's also a great chair for dentists and surgeons who work in semi-standing positions or when used back-to-front so that the back panel supports the chest.

Technical data:
Total weight: 12,9 kg (14,8 kg with packaging)
More information: http://www.hag-uk.co.uk/products/hag-capisco/

Market:
Europe and USA

Reference service life:
15 years

Materials	kg	%
Steel	4,8	37 %
Steel	2,9	23 %
Plast	4,8	37 %
Textile	0,3	2 %
Cardboard	0,1	1 %
Various	0,0	0 %
	0,0	0 %
Total product	12,9	100 %
Cardboard (packaging)	1,8	
Total product and packaging	14,8	



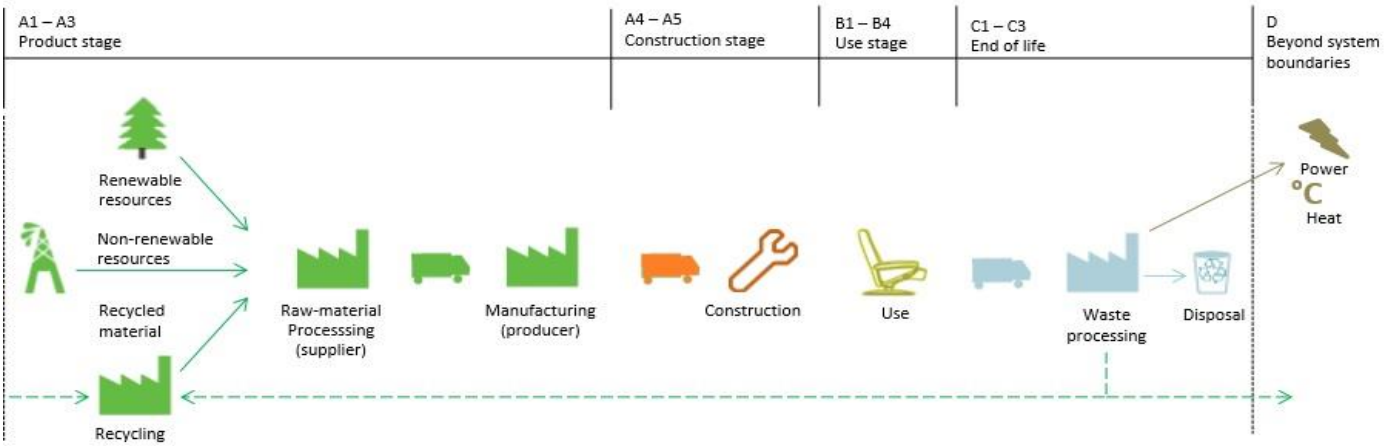
Materials	Recycled share for each material	Recycled amount	Recycled share in product	Recyclable share for each material	Recyclable amount	Recyclable share in product
Unit	%	kg	%	%	kg	%
Steel	28 %	1,4	9 %	100 %	4,8	1 %
Aluminium	90 %	2,6	18 %	100 %	2,9	30 %
Polypropylene	95 %	2,2	15 %	100 %	2,3	9 %
Polyurethane	0 %	0,0	0 %	0 %	0,0	0 %
Other plastic	0 %	0,0	0 %	100 %	1,2	48 %
Textile	93 %	0,3	2 %	100 %	0,3	3 %
Varnish	0 %	0,0	0 %	0 %	0,0	0 %
Not included	0 %	0,0	0 %	0 %	0,0	0 %
Total product	**-**	**6,5**	**50 %**	**-**	**11,5**	**89 %**
Cardboard (packaging)	75 %	1,4		100 %	1,8	
Total product and packaging		**7,8**	**53 %**	**-**	**13,3**	**90 %**

In manufacture, about 53% of the total mass of the chair and its packaging is recycled material. At the end of the chair's life, about 90% of its total mass will consist of materials that can be recycled.

LCA: Calculation rules

Functional unit:
Production of one seating solution provided and maintained for a period of 15 years.

System boundary:
Life cycle stages included are described in figure and through the corresponding letter and number designations in the declaration (see figure below).



The seating solution components are assembled at SBSeating's facility in Røros.

Data quality:
Specific data from suppliers and manufacturer 2011/2012 are used in the EPD analysis. Database data from Ecoinvent 3 is used as the basis for raw material and energy carrier production.

Cut-off criteria:
All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows that are included with very small amounts (<1%) are not included. This cut-off rule does not apply for hazardous materials and substances

Allocation:

- Where virgin materials are used, emissions and energy consumption connected with extraction and production are included.
- Where recycled materials are used in the product, emissions and energy consumption related to the recycling process are included.
- Emissions from incineration of waste are allocated to the product system that uses the recovered energy. This is a deviation from the PCR for Ecoinvent processes, where emissions from incineration are allocated to the product system in which the waste arises.
- Emissions from incineration of waste without energy recovery are allocated to the production system where the waste arises.

Additional information
According to the PCR the output should include both impact and the largest emissions (by mass) to air and water. Because of the format of the EPD the largest emissions are not presented.
The methods for calculating the environmental impact are IPCC 2007 for global warming and CML 2001 for other impact categories.
Material recycling at end of life (D) is not within the system boundaries, but as a scenario. The avoided emissions from replaced virgin material are included in D.

LCA: Scenarios and additional technical information

Transportation to an average customer in Copenhagen is 1000 km (A4). The use stage is represented by a scenario and includes vacuum cleaning of textiles once a month. The PCR does not provide detailed guidelines for what should be included in the use stage. In the end of life stage, the transport distance for waste to waste processing is 72 km (C1).
The reuse, recovery and recycling stage is beyond the system boundaries (D). It is assumed that the chair is dismantled and the materials recycled or combusted according to the general Norwegian treatment of industrial waste. This calculation includes CO2 emissions and energy only (C1-D). Disassembly is a manual process with no impacts on the results of the LCA and is therefore not included. The transport distance to reuse, recovery or recycling varies for each material, but the average distance is 373 km.

LCA: Results

The following information describes the scenarios in the different modules of the EPD.

System boundaries (X=included, MND=modul not declared, MNR=modul not relevant)

Product stage			Construction stage		Use stage				End of life			Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Construction	Maintenance	Repair	Replacement	Operational energy use	Transport	Waste Processing	Disposal	Reuse-recovery-recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	C1	C2	C3	D
x	x	x	x	MNR	x	MNR	MNR	MNR	x	x	x	x

Environmental impact

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
GWP	42	1,3	2,4	45	2,0	6,1E-03	1,2	11,9	0,0	13	-11
ODP	2,0E-05	8,4E-08	1,8E-07	2,1E-05	1,3E-07	1,9E-10	0	0	0	0	-1,51E-05
POCP	1,3E-02	1,3E-04	5,8E-04	1,3E-02	1,4E-04	1,2E-06	0	0	0	0	-3,18E-03
AP	7,2E-02	1,0E-03	5,3E-03	7,9E-02	1,5E-03	5,0E-06	0	0	0	0	-1,53E-02
EP	0,19	5,4E-03	8,8E-03	2,0E-01	6,7E-03	3,4E-05	0	0	0	0	-4,44E-02
ADPM*	3,5E-04	5,8E-09	7,1E-06	3,6E-04	9,2E-09	2,0E-08	0	0	0	0	-1,92E-04
ADPE	500	18	33	551	28	8,2E-02	0	0	0	0	-260

*Some processes included are based on data from EcoInvent 3.0.1. which is lacking data for renewable resources. The correct number of ADPM in the table above and RPEE, RPEM and TPE in the table below may be higher. See referance [5] for details. The lack of data will be adressed in a new version of Ecoinvent 3, which not was available when this declaration was carried out.

GWP Global warming potential (kg CO2-eqv.); **ODP** Depletion potential of the stratospheric ozone layer (kg CFC11-eqv.); **POCP** Formation potential of tropospheric photochemical oxidants (kg C2H4-eqv.); **AP** Acidification potential of land and water (kg SO2-eqv.); **EP** Eutrophication potential (kg PO4-3-eqv.); **ADPM** Abiotic depletion potential for non fossil resources (kg Sb -eqv.); **ADPE** Abiotic depletion potential for fossil resources (MJ)

Resource use**

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
RPEE*	9	0	2,6E-03	8,9	0	9,26E-02	0	0	0	0	-13
RPEM*	3	2,2E-03	14,7	18,1	3,3E-03	0	0	0	0	0	-13
TPE*	12	2,2E-03	14,7	26,9	3,3E-03	9,26E-02	0	0	0	0	-26
NRPE	479	18	31,7	529	28	7,86E-02	19	51	0,99	71	-271
NRPM	106	0	4	109	0	0	0	0	0	0	0
TRPE	585	18	35	639	28	8,76E-02	19	51	0,99	71	-271
SM	7	0	1	8,06	0	0	0	0	0	0	-7
RSF	0	0	0	0	0	0	0	0	0	0	0
NRSF	-3,0	0	0	-3,0	0	3,96E-02	0	0	0	0	0
W	1,69	3,5E-03	0,08	1,78	5,4E-03	0	0	0	0	0	-0,4

* See above.

** Energy is given in MJ in accordance with recommandations in the Norwegian EPD progam.

RPEE Renewable primary energy resources used as energy carrier (MJ); **RPEM** Renwable primary energy resources used as raw materials (MJ); **TPE** Total use of renewable primary energy resources (MJ); **NRPE** Non renewable primary energy resources used as energy carrier (MJ); **NRPM** Non renewable primary energy resources used as materials (MJ); **TRPE** Total use of non renewable primary energy resources (MJ); **SM** Use of secondary materials (kg); **RSF** Use of renewable secondary fuels (MJ); **NRSF** Use of non renewable secondary fuels (MJ); **W** Use of net fresh water (m3)

End of life - Waste and Output flow

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
HW	0,01	1,3E-05	6,4E-05	1,3E-02	2,0E-05	5,8E-06					0
NHW	16	1,0E-02	4,3E-01	16	1,6E-02	7,6E-04			2,3	2,3	-2,5
RW	0	0	0	0	0	0					0
CR	0	0	0	0	0	0					0
MR	0	0	1	0,83	0	0		9,9		9,9	0
MER	0	0	0	0,20	0	0		3		3	0
EEE	0	0	0	0	0	0					0
ETE	0	0	0	0	0	0					86

HW Hazardous waste disposed (kg); **NHW** Non hazardous waste disposed (kg), **RW** Radioactive waste disposed (kg); **CR** Components for reuse (kg); **MR** Materials for recycling (kg); **MER** Materials for energy recovery (kg); **EEE** Exported electric energy (MJ); **ETE** Exported thermal energy (MJ)

Specific Norwegian requirements

Electricity
The following data from ecoinvent v3 (June 2012) for Norwegian production mix included import, low voltage is used; Energy/Electricity country mix/Low voltage/Market: Electricity, low voltage {NO}| market for | Alloc Def, U. Production of transmission lines, in addition to direct emissions and loss in grid are included. Characterisation factors stated in EN 15804:2012+A1:2013 are used. This gives following greenhouse gas emissions: 24 g CO2-eqv/kWh.

Dangerous substances

None of the following substances have been added to the product: Substances on the REACH Candidate list of substances of very high concern (of '16.06.2014) substances on the Norwegian Priority list (pr.17.06.2013) and substances that lead to the product being classified as hazardous waste. The chemical content of the product complies with regulatory levels as given in the Norwegian Product Regulations.

Indoor environment
http://productguide.ulenvironment.com/ProductDetail.aspx?productID=4567&BrandID=11

Climate declaration
Not relevant

Bibliography

[1] NS-EN ISO 14025:2006, Environmental labels and declarations-Type III environmental declarations-Principles and procedures.

[2] NS-EN ISO 14044:2006, Environmental management - Life cycle assessment - Requirements and guidelines

[3] EN 15804:2012 + A1:2013 Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products

[4] PCR for seating solution: PRODUCT-CATEGORY RULES(PCR) for preparing an environmental product declaration (EPD) for Product Group “Seating solution”, PCR 2008:NPCR 003, extended version

[5] Vold, M; Livsløpsdata for 6 sitteløsninger fra Håg. Bakgrunnsdata for miljødeklarasjon (EPD), Østfoldforskning AS, OR 17.14 Fredrikstad.

[6] Raadal, H. L., Modahl, I. S., Lyng, K. A. (2009). Klimaregnskap for avfallshåndtering, Fase I og II. OR 18.09. ISBN : 978-82-7520-611-2, 82-7520-611-1

[7] http://productguide.ulenvironment.com/ProductDetail.aspx?productID=4567&BrandID=11

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Østfoldforskning SUSTAINABLE INNOVATION	**Author of the Life Cycle Assessment** Østfoldforskning AS Stadion 4, 1671 Kråkerøy Contact person: Mie Vold	Phone: Fax e-mail: web	69 35 11 00 69 34 24 94 post@ostfoldforskning.no www.ostfoldforskning.no

CERTIFICATE OF COMPLIANCE

GREENGUARD

PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS
UL.COM/GG
UL 2818

HAG

HÅG Capisco

Restrictions:

4567-410
Certificate Number

05/18/2006 - 05/19/2017
Certificate Period

Certified
Status

UL 2818 - 2013 Standard for Chemical Emissions for Building Materials, Finishes and Furnishings

Products tested in accordance with UL 2821 test method to show compliance to emission limits in UL 2818, Section 7.1.

Seating units are tested in accordance with ANSI/BIFMA M7.1-2011 and determined to comply with ANSI/BIFMA X7.1-2011 and ANSI/BIFMA e3-2014e Credit 7.6.1. Seating units are modeled in the seating environment.

Environment

GREENGUARD Certification Criteria for Mattresses, Bedding, Component Materials and Seating Units

Criteria	CAS Number	Maximum Allowable Predicted Concentration	Units
TVOC(A)	-	0.25	mg/m³
Formaldehyde	50-00-0	30.7 (25 ppb)	µg/m³
Total Aldehydes (B)	-	0.05	ppm
4-Phenylcyclohexene (C)	4994-16-5	3.25	µg/m³
Individual VOCs (D)	-	1/10th TLV	-

(A) Defined to be the total response of measured VOCs falling within the C_6 – C_{16} range, with responses calibrated to a toluene surrogate.

(B) The sum of all measured normal aldehydes from formaldehyde through nonanal, plus benzaldehyde, individually calibrated to a compound specific standard. Heptanal through nonanal are measured via TD/GC/MS analysis and the remaining aldehydes are measured using HPLC/UV analysis.

(C) Applicable to flooring and furniture, including component materials.

(D) Allowable levels for chemicals not listed are derived from 1/10th of the Threshold Limit Value (TLV) industrial work place standard (Reference: American Conference of Government Industrial Hygienists, 6500 Glenway, Building D-7, and Cincinnati, OH 45211-4438).

Prüfbericht - Nr.: 21168419-001

Test Report No.:

Auftraggeber: *Client:*	Scandinavian Business Seating AS Sundveien 7374 Røros Norway
Gegenstand der Prüfung: *Test item:*	Office work chair model "Capisco"
Bezeichnung: *Identification:*	**Serien-Nr.:** *Serial No.:* 8106
Wareneingangs-Nr.: *Receipt No.:* 10047672-1/2 and 10048171	**Eingangsdatum:** *Date of receipt:* 22.03. and 01.04.2011
Prüfort: *Testing location:*	TÜV Rheinland LGA Products GmbH Tillystraße 2, 90431 Nürnberg
Prüfgrundlage: *Test specification:*	ANSI/BIFMA X5.1-2002
Prüfergebnis: *Test Result:*	**Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).** *The test item passed the test specification(s).*
Prüflaboratorium: *Testing Laboratory:*	Möbelprüfinstitut Nürnberg

geprüft/ *tested by:*

Rackl

13.05.2011	Rackl/Sachbearbeiter/*Expert*	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

kontrolliert/ *reviewed by:*

13.05.2011	Heym/Laborleiter/*Head of laboratory*	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges/ *Other Aspects:*

Auftrags-Nr. 3021186
Order-Nr. 3021186

Anlage: Untersuchungsbericht Nr. 21168419-001, bestehend aus 4 Seiten
Annex: Test report 21168419-001, consisting of 4 pages

Abkürzungen:				*Abbreviations:*			
	P(ass)	=	*entspricht Prüfgrundlage*		*P(ass)*	=	*passed*
	F(ail)	=	*entspricht nicht Prüfgrundlage*		*F(ail)*	=	*failed*
	N/A	=	*nicht anwendbar*		*N/A*	=	*not applicable*
	N/T	=	*nicht getestet*		*N/T*	=	*not tested*

Prüfbericht - Nr.: 21168419-001
Test Report No.:

Messgerät/meter measurements	Gerätenummer/ Ident.-Nummer Barcode-Nummer	nächste Kalibrierung/ next calibration
	2281	11.11.2011
	2283	20.10.2011
	2284	20.10.2011
	2291	10.11.2011
	2320	25.05.2013
	2327	12.07.2011
	2387	03.01.2012
	2413	06.07.2011
	2427	14.07.2011
	2749	27.10.2011
	3642	02.11.2011
	4475	13.01.2012
	4477	13.01.2012
	4478	03.11.2011
	4481	03.11.2011
	4488	21.10.2011
	4983	06.09.2011
	5934	06.09.2012
	6108	19.08.2012
	8626	28.10.2011
	8704	01.07.2011
	8709	16.03.2012
	5934	12.08.2012
	10273	27.10.2011
	10700	21.12.2011
	5932	14.12.2012

TÜV Rheinland LGA Products GmbH
Furniture Test Institute Nuremberg

Test Report

No 21168419-002e
Order no. 3021186

Reported to: Scandinavian Business Seating AS
Sundveien
7374 Røros
Norway

Object: Office work chair model "Capisco"

Order: Test to ANSI/BIFMA X 5.1 - 2002

Findings:

The office work chair model "Capisco" was tested in accordance with ANSI/BIFMA X 5.1-2002 at the laboratory of Furniture Test Institute Nuremberg.

The office work chair model range"Capisco" **complies** to type I in accordance with ANSI/BIFMA X 5.1-2002 and meets all requirements for strength, durability and safety according to this standard.
The following pages contain technical data and details of the test.

Nuremberg, 05/12/2011
569 /hy/ra/pi

TÜV Rheinland
LGA Products GmbH
Furniture Testing Institute

Dipl. Ing. (FH) R. Heym
Head of laboratory

F. Rackl
Franz Rackl
Test Officer

TÜV Rheinland LGA Products GmbH
Tillystraße 2 • 90431 Nürnberg
Tel . +49 911-655-5831 • Fax +49 911-655-5834
eMail: moebeltest@de.tuv.com • www.tuv.com/safety

Residence and register court Nürnberg HRB 20613
Managing Directors: Hans-Hermann Ueffing, Jörg Mähler
Tax-No: 216/5715/1213 VAT No: DE 811835490

Test Results

Object

Article:	Office work chair model "Capisco"
Article no.:	8106
Number of samples:	2 + plastic bases
Delivered:	22.03. and 01.04.2011
Reg. No.:	10047672-1/2 and 10048171
Delivered by:	Scandinavian Business Seating AS

Scope of tests

General examination

Technical test
Test to ANSI/BIFMA X 5.1-2002, Type I

Applicability of test results

The test results refer solely to the samples tested. The digital pictures shown in this report are for additional information only and are not part of this report.

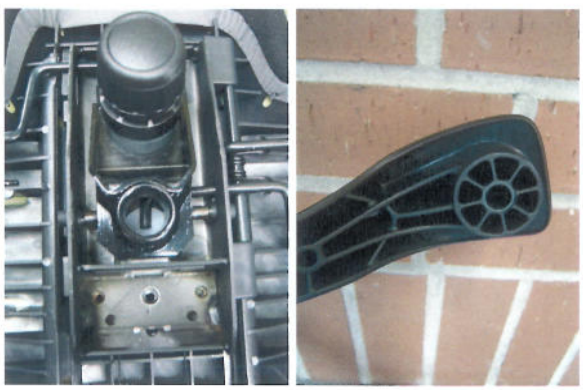
Measurement uncertainty

Unless otherwise stated the dimensional measurements are taken to an accuracy according to DIN 7168-g for old constructions resp. DIN ISO 2768 part 1 "c" for new constructions. For all other physical values the measurement uncertainty is < 5 %. The tests were carried out at standard climate unless otherwise stated.

General examination

Brief description of the samples

- Seat adjustable in height by means of gas spring manufactured by STABILUS
- Denomination of the gas spring: Stap-O-Mat DIN 4550-4 D 007 782 361 10D
- Seat mechanism made of with tilt action
- Initial tension of the tilt spring adjustable by means of rotating hand knob,
- Mechanism made of steel, lockable in base position and rear stop position
- Seat- and backrest shell made of plastic (PP) upholstery foam made of shaped PU foam
- Separate seat depth adjustment of 84 mm by horizontal sliding seat adjustable in 7 steps by means of a hand lever
- Backrest bearer made of aluminium die cast
- Backrest height adjustment of 90 mm in 7 steps by pull button
- Base made of aluminium die cast AL Stenal-460 “126167” from “NYSTRÖMS” or optional plastic base “113002” made of PA6 30%GF from RGE
- 5 brake unloaded twin wheel swivel castors Ø 50 mm, type "H" 125104, “W”:125108
- Denomination of castors: none
- Castor manufacturer: JENP YOU



Summary of test results type I

Number	Name	Title
5	Back Strength Test - Static - Type I	pass
6	Back Strength Test - Static - Type II	pass
7	Base Test – Static (aluminium and plastic)	pass
8	Drop Test - Dynamic	pass
9	Swivel Test – Cyclic	pass
10	Tilt Mechanism Test – Cyclic	pass
11	Seating Durability Test – Cyclic	pass
12	Stability Test – Dynamic	pass
13	Arm Strength Test – Vertical – Static	not applicable
14	Arm Strength Test – Horizontal – Static	not applicable
15	Back Durability Test- Cyclic – Type I	pass
16	Back Durability Test- Cyclic – Type II	pass
17	Caster Durability Test - Cyclic	pass
18	Leg Strength Test – Front and Side Application	pass
19	Footrest Durability Test – Vertical - Cyclic	not applicable
20	Arm Durability Test – Cyclic	not applicable
21	Out Stop Test	pass
22	Tablet Arm Static Load Test	not applicable
23	Tablet Arm Load Ease Test - Cyclic	not applicable



Test 5 Functional load / Proof load



Test 6 Functional load / Proof load


Test No. 7 (plastic base)


Test 7 (alu base)

Test 8 Functional load / Proof load


Test No. 9


Test 10 Tilt Mechanism


Test 11.3


Test No. 11.4


Test No. 12.3


Test No. 15


Test No. 16

Note: The drop tests no.8 in lowest seat height with the plastic base caused a touch effect of the gas spring housing to the test floor.

Intertek Consumer Goods GmbH · Würzburger Straße 152 · 90766 Fürth · Germany

Scandinavian Business Seating AS
Sundveien, N-7374 Røros, Norway

Fürth, 28.11.2014

Test report no. FUHLFP2014-15896
Receipt of sample: 07.11.2014; period of investigation: 07.11.2014 – 28.11.2014

Overall laboratory management: Kerstin Scharrer / Hardlines Laboratory: Adem Durmaz

Test item: "HÅG Capisco 8106" Office work chair

Test General safety tests for the obtaining of the GS-Certificate

Determination:

Essential components of the tests were the safety, functionality, fitness-for-use and ergonomic properties. Basis of the tests were the following references: EN 1335, part 1, part 2 and part 3, DIN 4550 and considering the current state of the art of technique and ProdSG.

The reference models "HÅG Capisco 8106" was tested standing in for the complete office work chair model range "8106", "8107", "8126" and "8127".

In summary, the test results **have satisfied** the requirements of the above nominated test standards.

Notes:

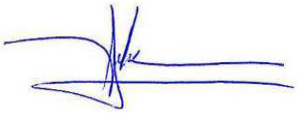
1. Please refer to the following pages for technical characteristics and results as well as detailed test conditions and requirements.
2. The office work chairs comply with type A of EN 1335, part 1. Thus the requirements for ergonomic design of the EU-Display Workstation Degree as laid out in DIN EN ISO 9241, part 5, ed.08.1999 are met.
3. The accessibility and selection of materials did not result in suspicion regarding a PAH-risk (see document ZEK 01.01-08 of ZLS), see page 31[1)].

Intertek Consumer Goods GmbH
Hardlines Testing Laboratory

Reviewed by:

Adem Durmaz
Director – Hardlines

Revised by:



Anh Vu Nguyen
Senior Engineer – Hardlines

Product identification:

Test sample:	Office work chair
Model name:	"HÅG Capisco 8106"
Item number:	8106, 8107, 8126, 8127
Manufacturer:	Scandinavian Business Seating AS 7366 Røros, Norway
Number of test samples:	1 piece
Distributor:	Scandinavian Business Seating AS
Distributor's item number	./.
Distributor's PO number:	./.
Delivered on:	07.11.2014
Delivered by:	Scandinavian Business Seating AS

Product documents:

- Consideration of test report 21169326_001 of TÜV Rheinland
- Consideration of GS-Certificate S 60039430
- PAH evaluation sheet FUHLFP2014-14910-PAH

Scope of the investigations:

General test and safety requirements according to

- EN 1335-1:2000 – Office furniture – Office work chair – Part 1: Dimensions; Determination of dimensions
- EN 1335-2:2010 – Office furniture – Office work chair – Part 2: Safety requirements
- EN 1335-3:2009 – Office furniture – Office work chair – Part 3: Test methods
- ZEK 01.01-08 of ZLS – PAH risk

Key to findings

P =	passed
F =	failed
n.a=	not applicable

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.

Measurement uncertainty:

Unless otherwise indicated, all measured dimensions are accurate in accordance with DIN 7168-g for old structures and in accordance with. DIN ISO 2768 part 1 "c" for new structures. For all other physical measurement values, the uncertainty range is < 5 %. Testing was done in standard climate conditions
of 23°C / 50% relative humidity.

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	Calliüer	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
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 (measurements in mm)

Depth: 545
Height: 950
Width: 590
Net weight: 11.9 kg

Brief description of the sample

Office work chair, model range "HAG Capisco" with two different types; headrest optional, aluminium 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 height adjustable by means of gas cylinder from Stabilus
- denomination of the gas spring: STAB-O-MAT D, DIN 4550-4
- 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 aluminium die cast AL 4250 2B, backrest support mounted on seat mechanism with one screw M8 x 35 mm
- aluminium or plastic base optional, plastic base "113002" from RGE made of PA6 30%GF, aluminium base "126167" from "NYSTRÖMS" made of aluminium die cast AL SS4250
- 5 break unloaded twin wheel swivel castors type "W" or "H" optional, with a diameter of 50 mm, type "H": 125104, type "W": 125108
- marking of castors: none
- castor manufacturer: JENP YOU

Product pictures: "HÅG Capisco 8106"

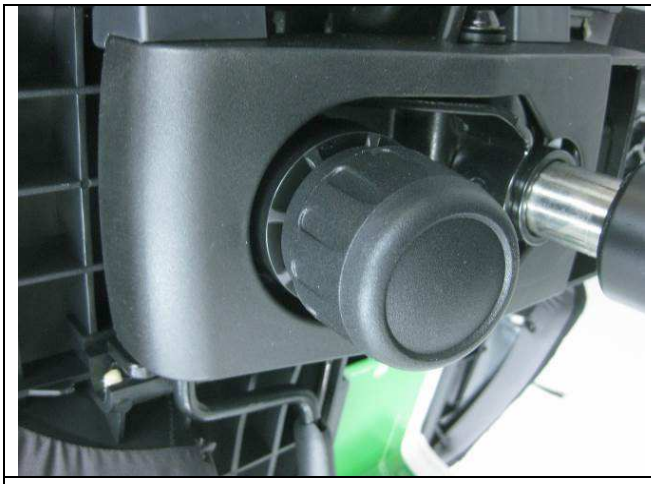
Pic.1: Front view

Pic.2: Side view

Pic.3: Back view

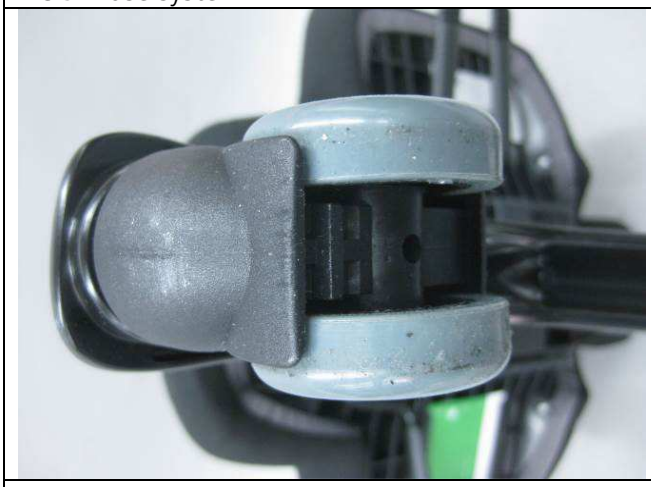
Pic.4: Bottom view

Product pictures: "HÅG Capisco 8106"



Pic.5: Base system

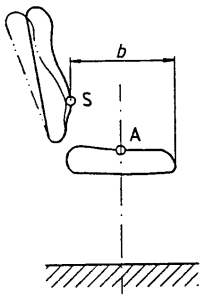
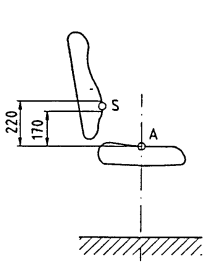
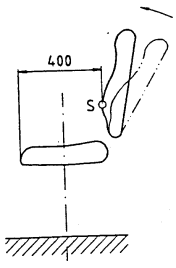
Pic.6: Seat height (gas spring) adjustment lever

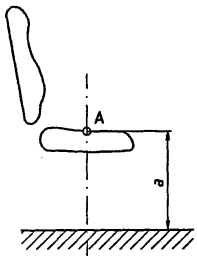
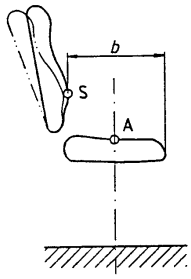


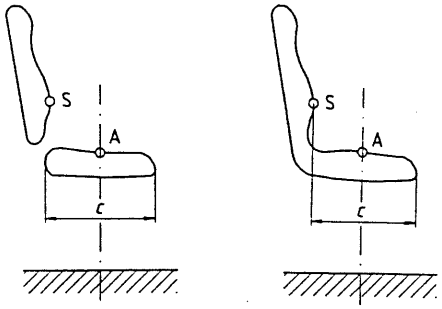
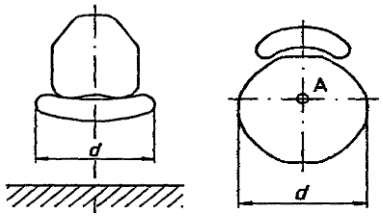
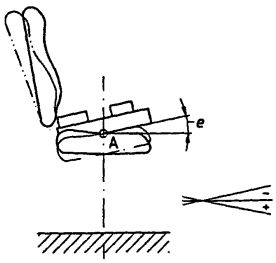
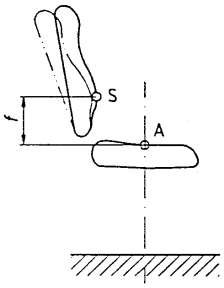
Pic.7: Castor

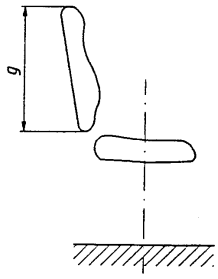
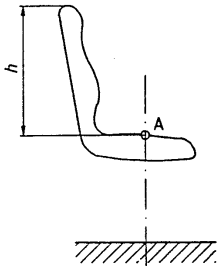
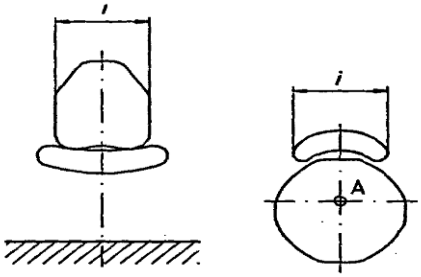
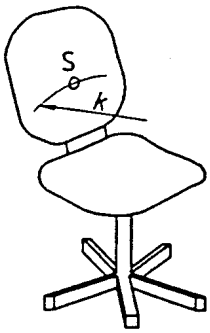
Pic.8: Product marking

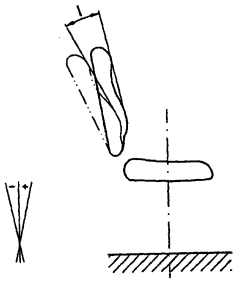
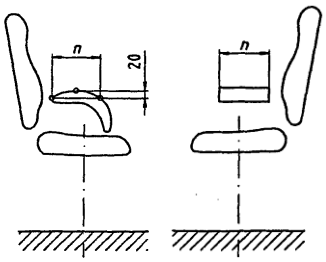
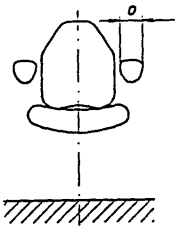
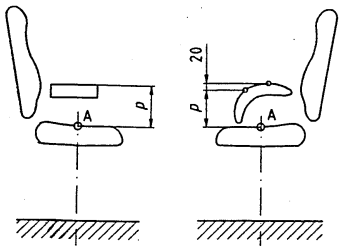
Technical testing

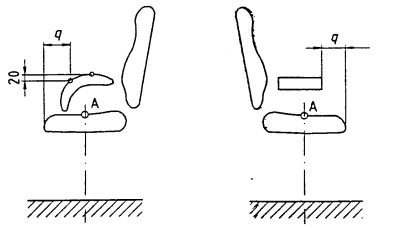
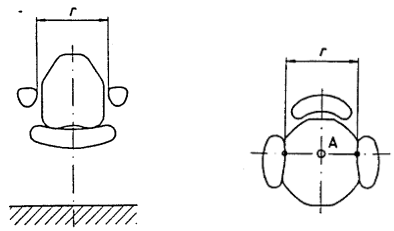
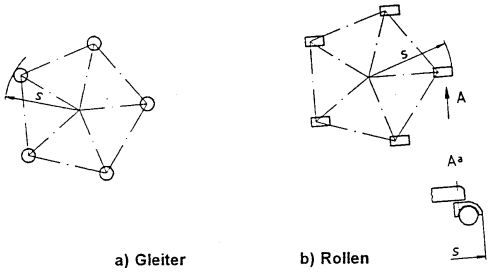
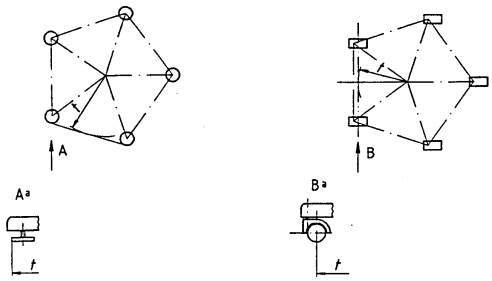
Test characteristics/requirements	Test parameters/results	Findings
Dimensions in accordance with EN 1335-1:2000 The chair shall provide support to the thighs and the lumbar region which sufficient depth and height to provide all users with a sitting position suited to their activity and their height. The dimension of the chair shall comply with one of the types of annex A. An exception is made in the case of the stability dimension *t*, provided that the chair passes the rearwards stability test according to 5.4.2 and 5.4.3 of EN 1335-3:1999. **Determination of reference points** The chair shall be positioned on a flat, rigid and horizontal test surface. **Point "A"** The dummy shall be placed on the seat surface symmetrically to the median plane in such a way that the centre of gravity of the main mass coincides with the axis of rotation. The seat shall be set as close as possible to the horizontal and the back rest shall be set as close as possible to the vertical. The movable mass shall be positioned so that the lower edge of the groove coincides with the vertical line tangential to the front edge of the seat. Before measuring, the seat shall be loaded and unloaded five times for a short period. **Back supporting point "S"** In the case of chairs with a back rest rotatable around a horizontal axes the upper and lower edges of the back rest shall be positioned vertically one above the other midway in the median plane before measurements are made. If this is not possible the closest possible position to it shall be chosen.	  	

Test characteristics/requirements	Test parameters/results	Findings
Determination of dimensions The chair shall be positioned on a flat, rigid and horizontal test surface. The seat shall be set as close as possible to the horizontal and the back rest shall be set as close as possible to the vertical. Linear dimensions shall have an accuracy of ±2 mm and all angles an accuracy of ±1°. Unless otherwise specified, all dimensions shall be measured loading at the measurement point. Where point "A" is used as reference point the seat shall be loaded by the dummy in accordance with 5.1. All adjustable dimensions and angles shall be measured both in the smallest an largest position. **Seat height [a]** The seat height [a] is the vertical distance between the floor and the point "A" NOTE: The height is determined by measurement, either at the front edge of the seat in combination with the slope of the dummy or directly at point "A". **Seat depth [b]** The seat depth [b] is the horizontal distance from the front edge of the seat to the vertical projection of the back supporting point "S", measured in the median plane. Before determining the seat depth of chairs with height adjustable back rests, the back supporting point "S" shall be set at a height of 220 mm above point "A". If the seat depth and back rest are adjusted simultaneously, i.e. when the seat depth is increased, the back rest height is automatically increased, the minimum seat depth shall be measured with back rest in its lowest position, and the maximum seat depth with the back rest in its highest position.	 	

Test characteristics/requirements	Test parameters/results	Findings
Depth [c] of seat surface The depth [c] of seat surface is the maximum horizontal distance between vertical lines through the front and rear edges of the seat surface. If the shape of the seat makes it impossible to define a rear edge, the maximum horizontal distance shall be measured from the rear of the seat surface below the back supporting point "S" (see 3.6) to the front edge of the seat surface. The measurement shall be carried out with the backrest set to the forward tilt. **Seat width [d]** The seat width [d] is the horizontal distance between vertical lines through the side edges of the seat surfaces measured in the transverse plane. **Inclination [e] of seat surface** The inclination [e] of the seat surface is the angle in the median plane between the lower edge of the dummy and a horizontal line. Rearwards slope is designated "-" otherwise "+". **Height [f] of the back supporting point "S" above the seat surface** The height [f] of the back supporting point "S" above the seat surface is the vertical distance between the point "S" and point "A".	   	

Test characteristics/requirements	Test parameters/results	Findings
Height [g] of the back pad The height [g] of the back pad is the vertical distance between the upper and lower edges of the back pad, measured in the median plane. **Height [h] of the upper edge of the back rest above the seat surface** The height [h] of the upper edge of the back rest above the seat surface is the vertical distance between the upper edge of the hack rest and the point "A" measured in the median plane. **Back rest width [i]** The back rest width [i] is the maximum horizontal distance between its side edges. **Horizontal radius [k] of back rest** The horizontal radius [k] of the back rest is the radius measured at the height of the back supporting point "S".	   	

Test characteristics/requirements	Test parameters/results	Findings
Back rest inclination adjustment range [l] ("tilt") The back rest inclination is the angle between the transverse plane and the back rest determined at point "S". Rearwards slope is designated "-" otherwise "+". The back rest inclination adjustment range [l] is the angle between the foremost and the rearmost position of the inclined back rest. **Length [n] of the useful area of the arm rest** The length [n] of the useful area of the arm rest is the horizontal distance between vertical lines through its front and rear edges. In the case of an arm rest which is not horizontal or which is rounded at the ends or is of non-rigid material, the dimension [n] shall be measured in a plane 20 mm below the highest point of the useful area of the arm rest. **Width [o] of the useful area of the arm rest** The width [o] of the useful area of the arm rest is the horizontal distance between vertical lines through the inner and outer edges of the arm rest. If the shape of the arm rest does not allow for an exact measurement of this width, it shall be measured 20 mm below the top edge. **Height [p] of the useful area of the arm rest above the seat** The height [p] of the useful area of the arm rest above the seat is for horizontal arm rests the vertical distance between the upper surface of the arm rest and point "A". In the case of an arm rest which is not horizontal or which is rounded at the ends or is of non-rigid material, the dimension [p] is the vertical distance between the horizontal plane 20 mm below the highest point of the arm rest and point "A".	   	

Test characteristics/requirements	Test parameters/results	Findings
Distance [q] from the front of the useful area of the arm rests to the front edge of the seat The distance [q] from the front of the useful area of the arm rests to the front edge of the seat surface is the horizontal distance between the front edge of the arm rests and a line extended vertically above the front edge of the seat surface in the median plane. **Clear width [r] between the useful area of the arm rests** The clear width [r] between the useful area of the arm rests is the horizontal distance between vertical lines through the inner edges of the arm rests, measured in the transverse plane. **Maximum offset [s] of the underframe** The maximum offset [s] of the underframe is the maximum between the outermost point of the underframe including castors or glides and the axis of rotation. **Stability dimension [t]** The stability dimension [t] is the smallest distance between the overbalancing axes on the floor and the axes of rotation of the chair. Where castors are used, the most unfavourable castor position shall be used for the measurement.	    	

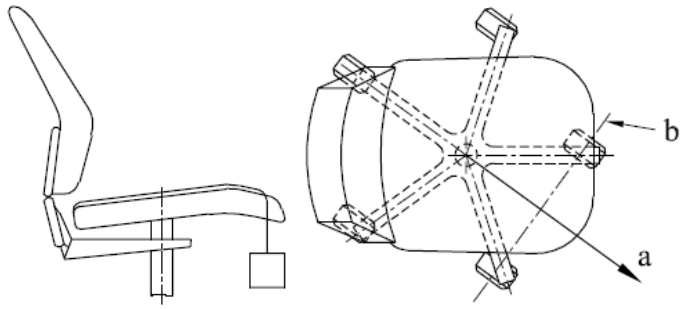
Dimension table for Office work chair "HAG Capisco Puls" – 8106 – TYPE "A"

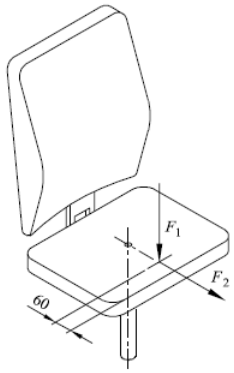
Dimensions	Symbol	Adjustability	Type A				Actual value	Results
Office work chair:			allowed (-)	Min. [a]	Max. [a]	allowed (+)		
Seat height [b)]	[a]	adjustable	yes	400	510	yes	**417 - 547 mm**	**P**
		adjustable range	no	120	+	yes	**130 mm**	**P**
Seat depth	[b]	fixed		./.	./.			
		adjustable	yes	400	420	yes	**335 – 390 mm**	**P [2)]**
		adjustable range	no	50	+	yes	**55 mm**	**P [2)]**
Depth of seat surface	[c]		no	380	+	yes	**390 mm**	**P**
Seat width	[d]		no	400	+	yes	**470 mm**	**P**
Inclination of seat surface	[e]	fixed		./.	./.			
		adjustable	yes	-2	-7	yes	**+1.8° to -14.9°**	**P**
		adjustable range	no	6°	+	no	**16.7°**	**P**
Height of the back Supporting point "S" above the seat surface	[f]	fixed		./.	./.			
		adjustable	yes	170	220	yes	**105 – 195 mm**	**P**
		adjustable range	no	50	+	yes	**90 mm**	**P**
Height of the back pad - adjustable in height - non-adjustable in height	[g]		 no no	 220 260	 + +	 yes yes	**460 mm**	**P**
Height of the upper edge of the back rest above the seat surface	[h]		no	360	+	yes	**390 - 480 mm**	**P**
Back rest width	[i]		no	360	+	yes	**290 / 590 mm**	**P**
Horizontal radius of the back rest	[k]		no	400	+	yes	**400 mm**	**P**
Back rest inclination	[l]	adjustable range	no	15°	+	yes	**16.8°**	**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 adjustable	no yes	200 200	250 250	no 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	**394 mm**	**P**
Stability dimension[h)]	[t]		no	195	+	yes	**255 mm**	**P**

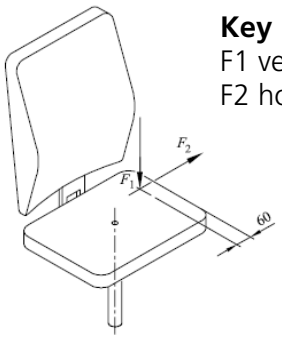
a) For adjustable functions the Min. and Max. values must be obtained.
b) The minimum range of adjustment is suitable for working surface heights between at least 680 mm and 780 mm. For some part of the user group a foot rest is required.
c) The requirement applies over the minimum value n (See clause 6.13).
d) The requirement applies from a height of 170 mm above point "A" (See clause 6.15).
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 (see clause 6.16).
f) If swivel castors are fitted the requirement is 415 mm.
g) X is the maximum horizontal distance between parts of the upper part of the chair and the axis of rotation (see clause 6)
+ No determination

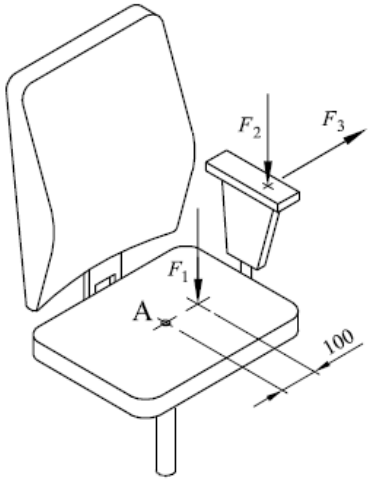
[2)] by tilt mechanism movement, + 80 mm separate way of sliding seat

Test characteristics/requirements	Test parameters/results	Findings
Safety requirements in accordance to EN 1335-2		
General design requirements		
Corners and edges, trapping, pinching and shearing	requirements fulfilled	
The chair shall be so designed as to minimise the risk of injury to the user.	no risk of injury	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. These requirements are met when: a) the safety distance of accessible movable parts is either ≤ 8 mm or ≥ 25 mm in any position during movement; b) accessible corners are rounded with minimum 2 mm radius; 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; d) the edges of handles are rounded with minimum 2 mm radius in the direction of the force applied; e) all other edges are free from burrs and rounded or chamfered; f) the ends of accessible hollow components are closed or capped.	fulfilled	P
Adjusting devices	requirements fulfilled	
Movable and adjustable parts shall be designed so that injuries and inadvertent operation are avoided.	fulfilled	P
It shall be possible to operate the adjusting devices from sitting position in the chair.	fulfilled	P
Connections	requirements fulfilled	
It shall not be possible for any load bearing part of the chair to come loose unintentionally.	fulfilled	P

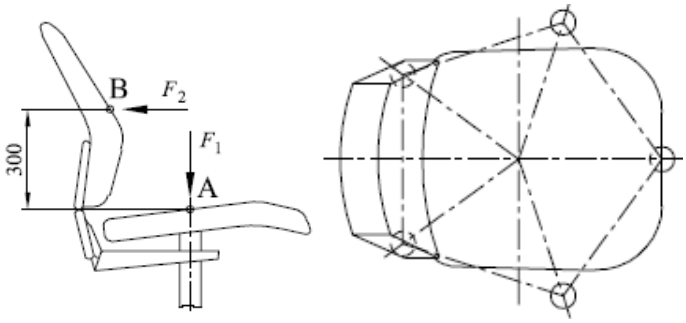
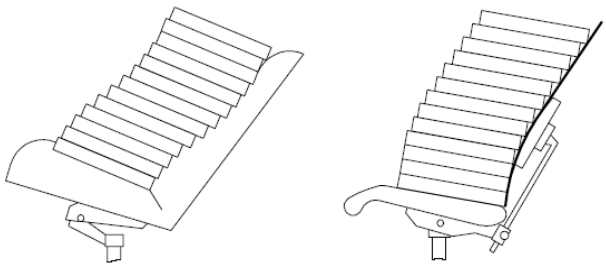
Test characteristics/requirements	Test parameters/results	Findings
Avoidance of soiling	requirements fulfilled	
All parts which are lubricated to assist sliding (greasing, lubricating, etc.) shall be designed to protect users from lubricant stains when in normal use.	fulfilled	
Stability during use	requirements fulfilled	
The chair shall not overbalance under the following conditions:		
a) by pressing down on the front edge of the seat surface in the most adverse position;	no overbalancing	P
b) by leaning out over the arm rests;	no overbalancing	P
c) by leaning against the back rest;	no overbalancing	P
d) by sitting on the front edge.	no overbalancing	P
Requirement a) is fulfilled if the chair does not overbalance when tested according to front edge overturning.		
Front edge overturning		
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).		
		
a position of the strap on the seat surface b the tilting axis, castors in the most adverse position		
Figure 7 — Front edge overturning		

Test characteristics/requirements	Test parameters/results	Findings
Requirements b) and d) are fulfilled if the chair does not overbalance when tested according to forwards overturning and forwards overturning for chairs with footrest. **Forwards overturning** Position the chair with two adjacent supporting points on the front against the stops. Apply by means of the stability loading device a vertical force F1 acting 60 mm from the front 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 outwards force F2 from the point on the seat surface where the vertical force is applied (see Figure 8).  **Key** F1 vertical force F2 horizontal force **Figure 8 — Forward overturning** **Forwards overturning for chairs with footrest** For chairs with footrests repeat the principle of 7.1.2 on the footrest. For round cross section ring shaped footrests, the vertical force F1 shall be applied through the centre of the ring cross section.	requirements fulfilled	

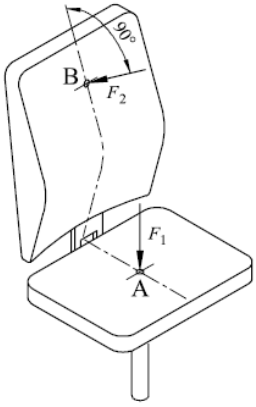
Test characteristics/requirements	Test parameters/results	Findings
Sideways overturning for chairs with and without armrests of EN 1335-3:2009 with the forces and numbers of cycles according to Table A.1 of this standard. **Sideways overturning for chairs without armrests** Position the chair with two adjacent supporting points on one side against the stops. Apply by means of the stability loading device a vertical force F1 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 F2 outwards from the point on the seat surface where the vertical force is applied, (see Figure 9). **Key** F1 vertical force F2 horizontal force  **Figure 9 — Sideways overturning for chairs without armrests**		

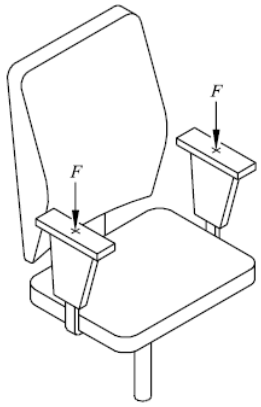
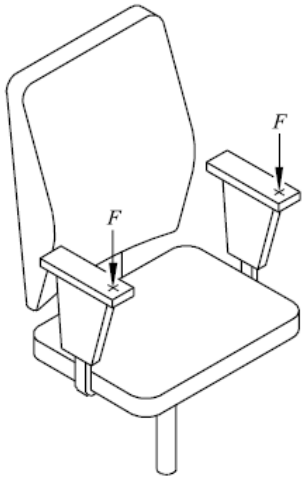
Test characteristics/requirements	Test parameters/results	Findings
Sideways overturning for chairs with armrests Position the chair with two adjacent supporting points on one side against the stops. Apply by means of the stability loading device a vertical force F1 acting at a point 100 mm from the fore 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. Apply a vertical downward force F2 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 F3 outwards from the same point for at least 5 s (see Figure 10). Dimensions in millimetres  **Key** A seat loading point F_1 vertical force F_2 vertical force F_3 horizontal force **Figure 10 — Sideways overturning for chairs with armrests**		

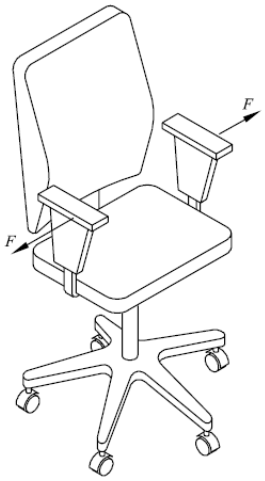
Test characteristics/requirements	Test parameters/results	Findings
The unloaded chair shall not roll unintentionally. This requirement is met when: a) the castors are of identical construction; b) the rolling resistance is ≥ 12 N when tested according to Rolling resistance of the unloaded chair. **Rolling resistance of the unloaded chair** 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. Record the force used to push or to pull the chair over the distance from 250 mm to 500 mm as the rolling resistance. Requirement c) is fulfilled if the chair does not overbalance when tested according to rearwards overturning for chairs without backrest inclination or Rearwards overturning for chairs with adjustable back rest inclination of EN 1335-3:2009 with the forces and numbers of cycles according to Table A.1 of this standard. **Rearwards overturning for chairs without back rest inclination** 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. A vertical force F1 shall be applied at point "A" and a horizontal force F2 shall be applied at point "B", (see Figure 11). 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".	rolling resistance 12 N	P

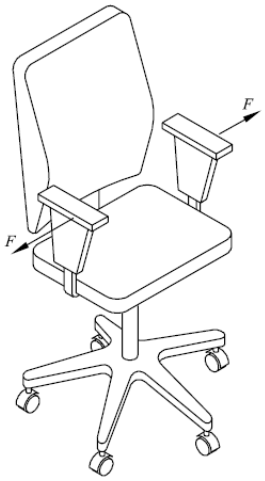
Test characteristics/requirements	Test parameters/results	Findings
 **Key** A seat loading point (6.1) B back loading point (6.2) F_1 vertical force F_2 horizontal force **Figure 11 — Rearward overturning for chairs without back rest inclination** **Rearwards overturning for chairs with adjustable back rest inclination** 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. 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.  **Figure 12 — Rearward overturning for chairs with adjustable back rest inclination**		

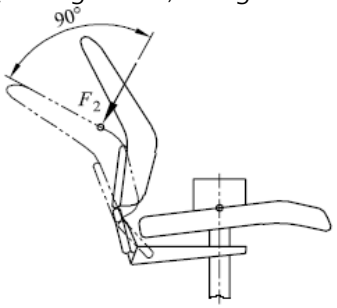
Test characteristics/requirements	Test parameters/results	Findings
Strength and durability	requirements fulfilled	
The chair shall be constructed to ensure that it does not create a risk of injury to the user of the chair under the following conditions:	no risk of injury	P
a) sitting on the seat, both centrally and off-centre;	fulfilled	P
b) moving forward, backwards, and sideways while sitting in the chair;	fulfilled	P
c) leaning over the armrests;	fulfilled	P
d) pressing down on the arm rests while getting up from the chair.	fulfilled	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 of EN 1335-3:2009 with the forces and numbers of cycles according to Table A.2 of this standard:		
e) there are no fractures of any member, joint or component, and	fulfilled	P
f) there is no loosening of joints intended to be rigid, and	fulfilled	P
g) no major structural element is significantly deformed and the chair fulfils its functions after removal of the test loads	fulfilled	P
h) after the test in Arm rest downward static load test – central of EN 1335-3:2009 with the forces and numbers of cycles according to Table A.2 of this standard, the arm rests show no fracture.	fulfilled	P

Test characteristics/requirements	Test parameters/results	Findings
Static load tests Position the chair and its components as specified in 4.1 and Table 1 on the test surface. **Seat front edge static load test** Position the chair and its components as specified in 4.1 and Table 1 on the test surface. **Combined seat and back static load test** Prevent the chair from moving rearwards by placing stops behind two adjacent supporting points at the rear of the chair. Apply a vertical force F1 through the seat loading pad at point "A". Keep the seat loaded and apply a force F2 through the centre of the back loading pad at point "B". When fully loaded the force shall act at 90° ± 10° to the back rest plane (see Figure 13). If the chair tends to overturn reduce the back rest force and report the actual force. Remove the back force and then the seat force.  **Key** A seat loading point (6.1) B back loading point (6.2) F_1 vertical force F_2 perpendicular force **Figure 13 — Combined seat and back static load test**		

Test characteristics/requirements	Test parameters/results	Findings
Arm rest downward static load test – central The arm rests shall be loaded vertically by means of the local loading pads. The loading points shall be at the mid point of the arm rest length and centred side to side (see Figure 14).  **Key** F vertical force **Figure 14 — Armrest downward static load test – central** **Arm rest downward static load test – front** The armrests shall be loaded vertically by means of the local loading pads. The loading points shall be 75 mm from the front edge and centred side to side. Apply the force to both arm rests simultaneously (see Figure 15).  **Key** F vertical force **Figure 15 — Arm rest downward static load test – front**		

Test characteristics/requirements	Test parameters/results	Findings
Arm rest sideways static load test Apply an outward horizontal force to both armrests simultaneously. Apply the forces to the edge of the arm rest at the point along the arm rest most likely to cause failure but not less than 75 mm from the front or rear edge (see Figure 16).  **Key** F horizontal force **Figure 16 — Arm rest sideways static load test** **Foot rest static load test** Apply a vertical force acting 80 mm from front edge of the load bearing structure of the foot rest at those points most likely to cause failure. For round cross section ring shaped footrests, the force shall be applied through the centre of the ring cross section. If the chair tends to overturn load the seat to prevent overturning and report this. **Durability tests** Position the chair and its components as specified in and Table 1 on the test surface except for the castor and chair base durability test.		

Test characteristics/requirements	Test parameters/results	Findings
Arm rest sideways static load test Apply an outward horizontal force to both armrests simultaneously. Apply the forces to the edge of the arm rest at the point along the arm rest most likely to cause failure but not less than 75 mm from the front or rear edge (see Figure 16).  **Key** F horizontal force **Figure 16 — Arm rest sideways static load test** **Foot rest static load test** Apply a vertical force acting 80 mm from front edge of the load bearing structure of the foot rest at those points most likely to cause failure. For round cross section ring shaped footrests, the force shall be applied through the centre of the ring cross section. If the chair tends to overturn load the seat to prevent overturning and report this. **Durability tests** Position the chair and its components as specified in and Table 1 on the test surface except for the castor and chair base durability test.		

Test characteristics/requirements	Test parameters/results	Findings
Seat and back durability The upper part of the chair shall be positioned so that the centre of the back rest is midway between two adjacent supporting points (3.5) of the base with stops (5.2) against these supporting points. The seat load shall be applied vertically using the seat loading pad (5.3). The back rest force shall be applied at an angle of 90° ± 10° to the back rest when fully loaded (see Figure 17) using the back loading pad (5.6).  **Key** F perpendicular force **Figure 17 — Backrest force application – principle** All chairs shall be tested to steps 1 to 5 (see Table 2). Chairs with a locking device(s) for seat and/or back rest angle movements shall be tested in step 2 first with the device(s) locked for half of the cycles and then with the device(s) unlocked for the other half of the cycles. For the first half of the cycles the back rest shall be in the upright position. In steps 3, 4 and 5 the mechanism shall be set free to move. One cycle shall consist of the application and removal of the force(s) at the respective loading point(s). Each step shall be completed before going to the next. First the seat force shall be applied and maintained while the back rest force is applied.		

Test characteristics/requirements	Test parameters/results	Findings
Table 2 — Seat and back durability test **Armrest durability** Apply simultaneously and cyclically the force on each arm rest at points 100 mm behind the foremost point of the arm rest length (see 3.4). Apply a force of (10 ± 5) N through a loading device in principle functioning as shown in Figure 4. With this force applied adjust the apparatus so that each "arm" of the test apparatus has an angle of 10° ± 1° to the vertical. The length of the "arm" of the test apparatus shall be 600 mm ± 10 mm. The arm rests shall be allowed to deform freely. **Swivel test** The base of the chair shall be secured on a rotating table with a test surface (see 5.1) so that the rotating axis of the chair coincides with the rotating axis of the table. The upper part of the chair shall be loosely fixed in such a way as not to hinder the rotation of the base. Load the seat in loading point A (6.1) with a mass M1 and in loading point C (6.3) with a mass M2 or any equivalent loading which will result in the same downwards force and bending moment on the chair. The angle of rotation shall be 360° at a rate of (10 ± 5) cycles/minute. Change direction after each rotation.		

Step	Loading point (see Figure 6)
1	A
2	C-B
3	J-E
4	F-H
5	D-G

Test characteristics/requirements	Test parameters/results	Findings
Footrest durability Using the local loading pad (5.5) apply a vertical downward force to the foot rest at the point most likely to cause failure but not less than 80 mm from the front edge. For round cross section ring shaped foot rests, the force shall be applied through the centre of the ring cross section. **Castor and chair base durability** This test does not apply to chairs with castors which are braked when the chair is loaded. The chair shall be placed on a rotating table with a test surface (see 5.11) so that the rotating axis of the chair coincides with the rotating axis of the table. Load the seat in point A with M1. The base shall be loosely fixed in such a way that there is no rotation of the base but that the natural movements of the castors during testing are not prevented. The castors shall be left free to swivel, the table shall be rotated with a rate of 6 cycles per minute. The angle of rotation shall be from 0° to 180° and back. One rotation forward and one rotation backward constitutes one cycle. Alternatively attach the chair to a device that provides a linear movement of (1 000 ± 250) mm and a test surface (see 5.11). Load the seat in point "A" with M1. The base shall be loosely fixed in such a way that there is no rotation of the base but that the natural movements of the castors during testing are not prevented. The castors shall be left free to swivel, the device shall move with a rate of 6 cycles per minute. One movement forward and one movement backward constitutes one cycle. NOTE For both alternatives it is recommended to perform the test with a speed as slow as possible with a short break when the device changes direction.		

Test characteristics/requirements	Test parameters/results	Findings
Information for use	requirements fulfilled	
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:	available	P
a) information regarding the intended use;	available	P
b) information regarding possible adjustments and chair type (see EN 1335-1:2000);	available	P
c) instruction for operating the adjusting mechanisms;	available	P
d) instruction for the care and maintenance of the chair;	available	P
e) information regarding all adjustments;	available	P
f) 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;	available	P
g) information on the choice of castors in relation to the floor surface.	available	P

Test characteristics/requirements	Test parameters/results	Findings
Additional requirements for the GS-mark		
Safety class of gas spring tube DIN 4550 cl. 5		
Maximum permissible distance "u" between seat front edge and the center of the gas spring in accordance with safety class may not be exceeded.	DIN 4550 certificate available	P
General safety requirements DIN 4550: 2004 cl. 6.1		
Self-supporting gas springs must have a tripping device on the face side and have to be made of one part in the load bearing area.	DIN 4550 certificate available	P
Gas spring taper DIN 4550 cl. 6.2, 6.3		
- overlapping minimum 80 % - one-piece taper - radius minimum 1 mm at the bottom edge - taper with smooth surface	DIN 4550 certificate available	P
Durability test for self-supporting energized devices DIN 4550 cl. 7.2		
Test certificate for durability test.	DIN 4550 certificate available	P
Marking of gas spring DIN 4550 cl. 9		
- manufacturer - type designation - classification - date of production (week / year)	DIN 4550 certificate available	P
Safety advice on the chair DIN 4550 cl. 9		
A conspicuous warning advice near the gas spring in German with the following content: "Achtung! Austausch und Arbeiten im Bereich des Sitzhöhenverstellelementes nur durch eingewiesenes Personal."	DIN 4550 certificate available	P
We recommend the safety advice also in the language of the country in which it will be delivered to the end user.		
Self assembly EK 5 / AK 3: 01-04		
The decision of EK 5 / AK 3: 01-04 for self assembly office work chairs shall be considered.	no assembly required	n.a.

Test characteristics/requirements	Test parameters/results	Findings
Marking according to ProdSG section 2 § 6		
Durable marking of product with name and contact address of manufacturer or importer and the product designation.	available	P
Materials		
Materials and its combinations shall not be toxic, among others the following certificates are necessary:	requirements fulfilled	
- test certifiacte of harmful substances for wooden materials.	no wood material	n.a.
- test certificates of harmful substances for upholstery and cover materials.	available	P
- risk analysis for Polycyclic Aromatic Hydrocarbons (PAH) according to the valid ZEK requirement.	available	P
User information DIN EN 1335-2, cl 5		
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: a) information regarding the intended use; b) information regarding possible adjustments and chair type (see EN 1335-1:2000); c) instruction for operating the adjusting mechanisms; d) instruction for the care and maintenance of the chair; e) information regarding all adjustments; f) 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; g) information on the choice of castors in relation to the floor surface.	available	P
Chemical assessment (PAH)	Remark 1)	P

Remark 1): The accessibility and selection of materials did not result in suspicion regarding a PAH-risk (see document ZEK 01.01-08 of ZLS). Evidences of cover materials / Armrests / Backrest are available at Intertek / Scandinavian Business Seating AS.

LEED for Commercial Interiors (LEED-CI)

HÅG Capisco gives 5 (or 6) LEED points

Contribution to green building projects.

LEED for Commercial Interiors offers building owners, tenants, designer and contractors a guideline for creating more efficient, healthier interior spaces that promote comfort and productivity. Points are distributed across 5 major credit categories, where 2 of the categories are relevant for HÅG as manufacturer.

HÅG Capisco contributes to green building projects as follow:

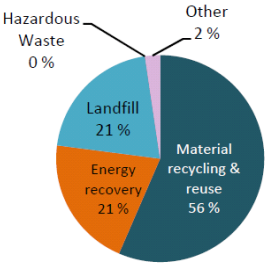
Materials and Resources (MR)

MR 2: Construction Waste Management

LEED intent: To divert construction and demolition debris in landfills and incineration facilities. Redirect recyclable recovered resources back to the manufacturing process and reusable material to appropriate sites.

Result: HÅG Capisco has defined waste management for 77% (21% for Energy recovery and 56% for Material recycling & reuse) of the product's components and materials.

LEED points: Gives 2 points (out of 2)



MR 4: Recycled Content

LEED intent: To increase demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.

Result: The HÅG Capisco contains 43 % post consumer recycled materials.

LEED points: Gives 2 points (out of 2)

MR 5: Regional Materials

LEED intent: To increase demand for building materials and product that are extracted and manufactured within the region, thereby supporting the regional economy and reducing the environmental impact resulting from transportation.

Result: HÅG products are manufactured at Røros, Norway. For most building projects in Norway its possible to have 1 LEED point - bur for the rest of Europe we do not fulfill the requirements.

LEED points: Can give 1 point (out of 2) if products are manufactured within a 500 miles/800 km of building project.

Indoor Environmental Quality (IEQ)

IEQ 4.5: Low-Emitting Materials

LEED intent: To reduce the quantity of indoor air contaminants that are odorous, irritating and harmful to the comfort and well-being of installers and occupants.

Result: HÅG Capisco is GREENGUARD certified.

LEED points: Gives 1 point (out of 1)

MÖBELFAKTA
INTYG

PRODUKTNAMN:	HÅG Capisco Arbetsstol 8105, 8106, 8107, 8126, 8127 Lackerat aluminiumkryss med hjul.
FÖRETAG:	Scandinavian Business Seating AB
REG.NUMMER:	0820130705
ANVÄNDARMILJÖ:	Kontorsmiljö

GILTIGHET: 2013-07-05 - 2018-07-05 under förutsättning att möbeln och kraven i Möbelfakta ej ändrats. Vid ändring gäller en övergångsperiod på 12 månader.

PRODUKTEN HAR DEKLARERATS OCH GODKÄNTS ENLIGT KRITERIERNA I MÖBELFAKTA VER. 2015-05-01.

- **KVALITET** – MÖBLERNA LEVER UPP TILL INTERNATIONELLA TEKNISKA STANDARDER
- **MILJÖ** – TILLVERKNINGEN ÄR MILJÖANPASSAD I ALLA LED, FRÅN RÅVARA TILL FÄRDIG MÖBEL
- **SOCIALT ANSVAR** – ALLA PARTER I PRODUKTIONSKEDJAN FÖRBINDER SIG ATT FÖLJA FN:S DIREKTIV THE GLOBAL COMPACT

ROBIN LJUNGAR, *Miljö- och hållbarhetschef, TMF*

tmf TRÄ- OCH MÖBELFÖRETAGEN

MÖBELFAKTA

Herved bekreftes at

Scandinavian Business Seating AS

har lisens nr 231 057 til å benytte Svanemerket på

HÅG Capisco 8106
HÅG Capisco 8107
HÅG Conventio 9520
HÅG Foot Ring

i overensstemmelse med miljømerkingskrav
for Møbler og innredninger versjon 4.9
gjeldende til 31.12.2017.

Sertifikatet har kun gyldighet sammen med utstedt lisens.

Stiftelsen Miljømerking i Norge

Anita Winsnes

Anita Winsnes, adm.direktør