

in accordance with ISO 14025, ISO 21930 and EN 15804

|                                |                              |
|--------------------------------|------------------------------|
| Owner of the declaration:      | Flokk AS                     |
| Program operator:              | The Norwegian EPD Foundation |
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# HÅG SoFi Mesh

Flokk AS

[www.epd-norge.no](http://www.epd-norge.no)



## General information

### Product:

HÅG SoFi Mesh

### Owner of the declaration:

Flokk AS  
 Contact person: Atle Thiis-Messel  
 Phone: 0047 98 25 68 30  
 e-mail: atle.messel@flokk.com

### Program operator:

The Norwegian EPD Foundation  
 Pb. 5250 Majorstuen, 0303 Oslo  
 Phone: +47 23 08 80 00  
 e-mail: [post@epd-norge.no](mailto:post@epd-norge.no)

### Manufacturer:

Flokk AS  
 Drammensveien 145, 0277 Oslo  
 Norway

### Declaration number:

LU.KchOODcwhMbcUL

### Place of production:

Flokk - Røros  
 Sundveien N-7374 Røros  
 Norway

### ECO Platform reference number:

### Management system:

ISO 14001, ISO 9001, ISO 50001(Norway, Sweden)

### This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A1:2013 serves as core PCR  
 NPCR 026:2018 Part B for furniture

### Organisation no:

No 928 902 749

### Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

### Issue date:vwPG:OGOPOO

### Valid to:vwPG:OGOPOD

### Declared unit:

1 Pcs HÅG SoFi Mesh

### Year of study:

2023

### Declared unit with option:

A1,A2,A3,A4

### Comparability:

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

### Functional unit:

HÅG SoFi Mesh 7500, black recycled plastic variant (including knock down Packaging 1)

### Development and verification of EPD:

The declaration has been developed and verified using EPD tool lca.tools ver EPD2020.11, developed by LCA.no AS. The EPD tool is integrated into the company's environmental management system, and has been approved by EPD-Norway

### General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Individual third party verification of each EPD is not required when the EPD tool is i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPDNorway, and iii) the process is reviewed annually. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools.

### Developer of EPD:

Kenneth Dam Lindegaard Knudsen

### Reviewer of company-specific input data and EPD:

Atle Thiis-Messel

### Verification of EPD tool:

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools.

### Approved:

Sign

Erik Svanes, Norsus AS

(no signature required)

Håkon Hauan, CEO EPD-Norge

| Key environmental indicators | Unit       | Cradle to gate A1 - A3 |
|------------------------------|------------|------------------------|
| Global warming               | kg CO2 eqv | 62,38                  |
| Total energy use             | MJ         | 964,39                 |
| Amount of recycled materials | %          | 47,59                  |

## Product

### Market:

Worldwide

### Product description:

HÅG SoFi Mesh brings together and perfects all the best features of the HÅG brand. Even though the chairs offers the most advanced ergonomic solutions, they are still some of the most user-friendly chairs around. HÅG in Balance® technology ensures more subconscious movement for more energy and better flow throughout your workday. Soft, embracing curves and innovative HÅG SlideBack™ armrests allows you to adjust your sitting posture for excellent comfort. Superior user-friendliness with minimal need for adjustment for the individual user. Designed to be customized with a wide range of materials and colours. Also available as a matching, dynamic meeting room chair. HÅG in Balance™, adjustable seat height, seat depth and lumbar support are standard, in addition to adjustable tilt resistance, lockable tilt and foot support. Adjustable armrests (height and width) with or without the unique HÅG SlideBack™ function and headrest are optional extras.

(HÅG SoFi 7500):

Chair height: 450-640 mm(with gas lift 200 mm)

Chair width: 600-715 mm

Chair depth: 380-460 mm

### Product specification

The model studied in this declaration is the HÅG SoFi Mesh 7500 with upholstered seat and high mesh back, black recycled plastic variant. The key environmental indicators for the other models of the HÅG SoFi Mesh collection are presented on a table on page 8 of this declaration.

### Technical data:

Total weight: 17,15 kg (packaging excluded)

Total weight: 19,93 kg (packaging included)

### Reference service life, product

### Reference service life, building

| Materials                        | kg    | %     | Recycled share in material (kg) | Recycled share in material (%) |
|----------------------------------|-------|-------|---------------------------------|--------------------------------|
| Others                           | 0,03  | 0,13  | 0,00                            | 0,80                           |
| Kraft paper unbleached           | 0,01  | 0,04  | 0,00                            | 0,00                           |
| Metal - Aluminium                | 3,27  | 16,42 | 3,16                            | 96,56                          |
| Metal - Steel                    | 5,09  | 25,56 | 0,13                            | 2,48                           |
| Metal - Zinc                     | 0,38  | 1,91  | 0,00                            | 0,00                           |
| Metal - Brass                    | 0,01  | 0,03  | 0,00                            | 0,00                           |
| Textile - Polyester (PE)         | 0,50  | 2,48  | 0,42                            | 85,79                          |
| Glass fibre                      | 0,93  | 4,66  | 0,93                            | 100,00                         |
| Packaging - Cardboard            | 1,10  | 5,50  | 0,00                            | 0,00                           |
| Plastic - Polyurethane (PUR)     | 1,01  | 5,07  | 0,00                            | 0,00                           |
| Plastic - Polypropylene (PP)     | 4,32  | 21,67 | 3,30                            | 76,41                          |
| Plastic - Polyoxymethylene (POM) | 0,31  | 1,54  | 0,00                            | 0,00                           |
| Rubber, synthetic                | 0,36  | 1,81  | 0,00                            | 0,00                           |
| Packaging - Plastic              | 0,08  | 0,42  | 0,00                            | 0,00                           |
| Glue for metals                  | 0,06  | 0,30  | 0,00                            | 0,00                           |
| Powder coating                   | 0,07  | 0,33  | 0,00                            | 0,00                           |
| Plastic - Nylon (PA)             | 0,65  | 3,28  | 0,00                            | 0,00                           |
| Plastic - Polyethylene (HDPE)    | 0,19  | 0,93  | 0,00                            | 0,00                           |
| Packaging - Paper                | 0,03  | 0,13  | 0,00                            | 0,00                           |
| Textile - Felt                   | 0,01  | 0,04  | 0,00                            | 0,00                           |
| Packaging - Recycled cardboard   | 1,54  | 7,75  | 1,54                            | 100,00                         |
| Total:                           | 19,93 |       | 9,48                            |                                |

## LCA: Calculation rules

### Declared unit:

1 Pcs HÅG SoFi Mesh

### Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

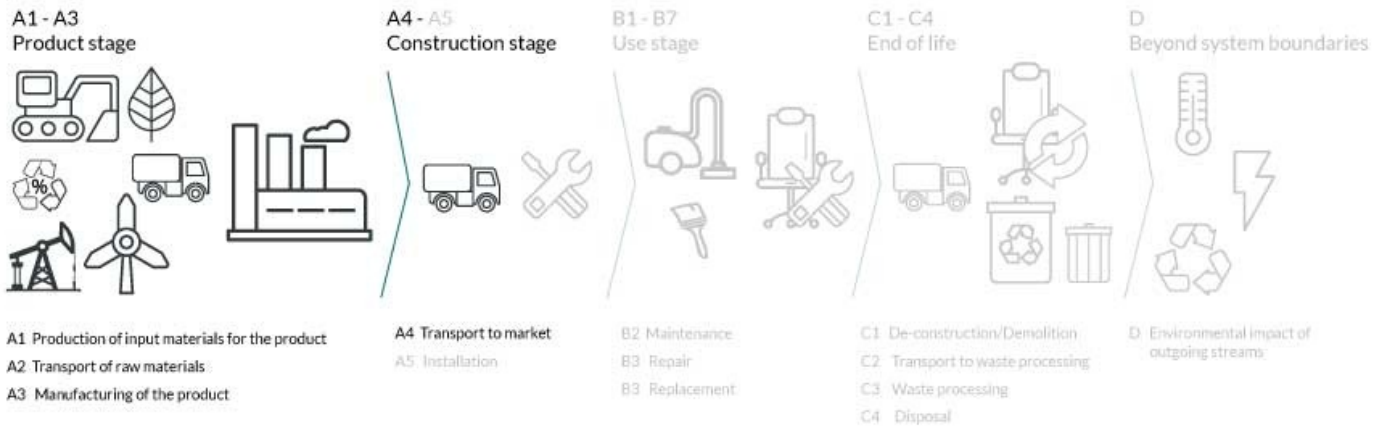
### Data quality:

Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Gafeld Research database, eqinvent and other

### Allocation:

The allocation is made in accordance with the provisions of EN 15804. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

**System boundary:**



**Additional technical information:**

Chair height: 450-640 mm(with gas lift 200 mm)

Chair width: 600-715 mm

Chair depth: 380-460 mm

## LCA: Scenarios and additional technical information

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

### Transport from production place to user (A4)

| Type                 | Capacity utilisation (incl. return) % | Type of vehicle               | Distance km | Fuel/Energy consumption | Unit  | Value (l/t) |
|----------------------|---------------------------------------|-------------------------------|-------------|-------------------------|-------|-------------|
| Truck                | 55,0 %                                | Truck, over 32 tonnes, EURO 5 | 1000        | 0,022823                | l/tkm | 22,82       |
| Railway              |                                       |                               |             |                         | l/tkm |             |
| Boat                 |                                       |                               |             |                         | l/tkm |             |
| Other Transportation |                                       |                               |             |                         | l/tkm |             |

### Assembly (A5)

| .                                    | Unit           | Value |
|--------------------------------------|----------------|-------|
| Auxiliary                            | kg             |       |
| Water consumption                    | m <sup>3</sup> |       |
| Electricity consumption              | kWh            |       |
| Other energy carriers                | MJ             |       |
| Material loss                        | kg             |       |
| Output materials for waste treatment | kg             |       |
| Dust in the air                      | kg             |       |
| VOC emissions                        | kg             |       |

### Use (B1)

| . | Unit | Value |
|---|------|-------|
|   |      |       |

### Maintenance (B2)/Repair (B3)

| .                       | Unit           | Value |
|-------------------------|----------------|-------|
| Maintenance cycle*      |                |       |
| Auxiliary               |                |       |
| Other resources         |                |       |
| Water consumption       | m <sup>3</sup> |       |
| Electricity consumption | kWh            |       |
| Other energy carriers   | MJ             |       |
| Material loss           | kg             |       |
| VOC emissions           | kg             |       |

### Replacement (B4)/Refurbishment (B5)

| .                             | Unit | Value |
|-------------------------------|------|-------|
| Replacement cycle*            |      |       |
| Electricity consumption       | kWh  |       |
| Replacement of worn parts     |      |       |
| * Described above if relevant |      |       |

### Operational energy (B6) and water consumption (B7)

| .                         | Unit           | Value |
|---------------------------|----------------|-------|
| Water consumption         | m <sup>3</sup> |       |
| Electricity consumption   | kWh            |       |
| Other energy carriers     | MJ             |       |
| Power output of equipment | kW             |       |

### End of Life (C1, C2)

| .                                     | Unit | Value |
|---------------------------------------|------|-------|
| Hazardous waste disposed              | kg   |       |
| Collected as mixed construction waste | kg   |       |
| Reuse                                 | kg   |       |
| Recycling                             |      |       |
| Energy recovery                       |      |       |
| To landfill                           | kg   |       |

### Transport to waste processing (C2)

| Type                 | Capacity utilisation (incl. return) % | Type of vehicle | Distance km | Fuel/Energy consumption | Unit  | Value (l/t) |
|----------------------|---------------------------------------|-----------------|-------------|-------------------------|-------|-------------|
| Truck                |                                       |                 |             |                         | l/tkm |             |
| Railway              |                                       |                 |             |                         | l/tkm |             |
| Boat                 |                                       |                 |             |                         | l/tkm |             |
| Other Transportation |                                       |                 |             |                         | l/tkm |             |

Scenarios after A1-A4 are not included

## LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

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

| Product stage |           |               |           | Construction installation stage | User stage |             |        |             |               |                        |                       |                           | End of life stage |                  |          |                                    | Beyond the system boundaries |
|---------------|-----------|---------------|-----------|---------------------------------|------------|-------------|--------|-------------|---------------|------------------------|-----------------------|---------------------------|-------------------|------------------|----------|------------------------------------|------------------------------|
| Raw materials | Transport | Manufacturing | Transport | Assembly                        | Use        | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | Deconstruction demolition | Transport         | Waste processing | Disposal | Reuse-Recovery-Recycling-potential |                              |
| A1            | A2        | A3            | A4        | A5                              | B1         | B2          | B3     | B4          | B5            | B6                     | B7                    | C1                        | C2                | C3               | C4       | D                                  |                              |
| X             | X         | X             | X         | MND                             | MND        | MND         | MND    | MND         | MND           | MND                    | MND                   | MND                       | MND               | MND              | MND      | MND                                |                              |

### Environmental impact

| Parameter | Unit                                 | A1       | A2       | A3       | A4       |
|-----------|--------------------------------------|----------|----------|----------|----------|
| GWP       | kg CO <sub>2</sub> -eq               | 6,03E+01 | 1,47E+00 | 5,92E-01 | 1,74E+00 |
| ODP       | kg CFC11 -eq                         | 3,19E-06 | 2,82E-07 | 3,54E-08 | 3,39E-07 |
| POCP      | kg C <sub>2</sub> H <sub>4</sub> -eq | 2,04E-02 | 2,39E-04 | 1,28E-04 | 2,81E-04 |
| AP        | kg SO <sub>2</sub> -eq               | 2,57E-01 | 4,94E-03 | 3,04E-03 | 5,65E-03 |
| EP        | kg PO <sub>4</sub> <sup>3-</sup> -eq | 7,11E-02 | 8,19E-04 | 1,05E-03 | 9,48E-04 |
| ADPM      | kg Sb -eq                            | 4,37E-03 | 3,23E-06 | 1,52E-05 | 3,93E-06 |
| ADPE      | MJ                                   | 6,73E+02 | 2,27E+01 | 3,69E+00 | 2,73E+01 |

GWP Global warming potential; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non fossil resources; ADPE Abiotic depletion potential for fossil resources

Reading example: 9,0 E-03 = 9,0\*10<sup>-3</sup> = 0,009

\*INA Indicator Not Assessed

### Resource use

| Parameter | Unit           | A1       | A2       | A3       | A4       |
|-----------|----------------|----------|----------|----------|----------|
| RPEE      | MJ             | 8,43E+01 | 4,12E-01 | 7,54E+01 | 4,93E-01 |
| RPEM      | MJ             | 1,76E+01 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| TPE       | MJ             | 1,02E+02 | 4,12E-01 | 7,54E+01 | 4,93E-01 |
| NRPE      | MJ             | 7,74E+02 | 2,34E+01 | 6,98E+00 | 2,81E+01 |
| NRPM      | MJ             | 1,15E+02 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| TRPE      | MJ             | 8,89E+02 | 2,34E+01 | 6,98E+00 | 2,81E+01 |
| SM        | kg             | 9,48E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| RSF       | MJ             | 7,71E-02 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| NRSF      | MJ             | 3,31E-02 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| W         | m <sup>3</sup> | 4,81E-01 | 5,50E-03 | 1,46E-02 | 6,63E-03 |

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

Reading example: 9,0 E-03 =  $9,0 \cdot 10^{-3} = 0,009$

\*INA Indicator Not Assessed

### End of life - Waste

| Parameter | Unit | A1       | A2       | A3       | A4       |
|-----------|------|----------|----------|----------|----------|
| HW        | kg   | 5,13E-02 | 1,25E-05 | 1,87E-02 | 1,49E-05 |
| NHW       | kg   | 3,48E+01 | 2,10E+00 | 3,73E-01 | 2,55E+00 |
| RW        | kg   | INA*     | INA*     | INA*     | INA*     |

HW Hazardous waste disposed; NHW Non hazardous waste disposed; RW Radioactive waste disposed

Reading example: 9,0 E-03 =  $9,0 \cdot 10^{-3} = 0,009$

\*INA Indicator Not Assessed

### End of life - Output flow

| Parameter | Unit | A1       | A2       | A3       | A4       |
|-----------|------|----------|----------|----------|----------|
| CR        | kg   | 1,23E-05 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| MR        | kg   | 3,94E-02 | 0,00E+00 | 2,54E+00 | 0,00E+00 |
| MER       | kg   | 1,62E-01 | 0,00E+00 | 1,41E-03 | 0,00E+00 |
| EEE       | MJ   | INA*     | INA*     | INA*     | INA*     |
| ETE       | MJ   | INA*     | INA*     | INA*     | INA*     |

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy

Reading example: 9,0 E-03 =  $9,0 \cdot 10^{-3} = 0,009$

\*INA Indicator Not Assessed

## Additional Norwegian requirements

### Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

| Electricity mix                                   | Data source      | Amount | Unit          |
|---|------------------|--------|---------------|
| Energy, electricity, Nordic average, hydro: 1 kWh | Østfoldforskning | 10,19  | g CO2-ekv/kWh |

### Dangerous substances

The product contains no substances given by the REACH Candidate list or the Norwegian priority list.

### Indoor environment

GREENGUARD Gold

## Additional environmental information

Key environmental indicators for variants for this EPD: Cradle to Gate analyse from A1 to A3

| Variant number  | Global warming (kg CO2) | Total energy use (MJ) | Share of recycled material in product(%) |
|---|-------------------------|-----------------------|--|
| HÅG SoFi Mesh 7500 - High mesh back, upholstered seat (Cura/Gabriel), black recycled plastic - No packaging               | 57,47                   | 904,17                | 46,28                                    |
| HÅG SoFi Mesh 7500 - High mesh back, upholstered seat (Cura/Gabriel), grey virgin plastic - No packaging                  | 58,94                   | 952,66                | 36,47                                    |
| HÅG SoFi Mesh Communication 7502 - High mesh back, upholstered seat (Cura/Gabriel), black recycled plastic - No packaging | 53,21                   | 840,34                | 48,66                                    |
| HÅG SoFi Mesh Communication 7502 - High mesh back, upholstered seat (Cura/Gabriel), grey virgin plastic - No packaging    | 55,29                   | 895,34                | 37,69                                    |

Key environmental indicators for options for this EPD: Cradle to Gate analyse from A1 to A3

| Option number  | Global warming (kg CO2) | Total energy use (MJ) | Share of recycled material in product(%) |
|--|-------------------------|-----------------------|--|
| Armrests Plastic with HÅG SlideBack, black recycled plastic    | 51,22                   | 679,22                | 34,55                                    |
| Armrests Plastic with HÅG SlideBack, grey virgin plastic       | 52,13                   | 702,79                | 32,07                                    |
| Armrests Plastic without HÅG SlideBack, black recycled plastic | 28,90                   | 416,24                | 41,67                                    |
| Armrests Plastic without HÅG SlideBack, grey virgin plastic    | 29,82                   | 439,81                | 38,53                                    |
| Armrests Aluminium with HÅG SlideBack                          | 43,73                   | 544,33                | 51,64                                    |
| Armrests Aluminium without HÅG SlideBack                       | 21,42                   | 281,35                | 64,75                                    |
| Headrest - Upholstered (Cura/Gabriel), black recycled plastic  | 17,59                   | 197,23                | 45,26                                    |
| Headrest - Upholstered (Cura/Gabriel), grey virgin plastic     | 17,09                   | 190,33                | 37,02                                    |
| Packaging 1 (Small box, not assembled - used in declared unit) | 4,91                    | 60,22                 | 55,68                                    |
| Packaging 2 (Large box, fully assembled)                       | 7,01                    | 84,54                 | 67,20                                    |

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|--|--|---|
|  | <b>Program operator and publisher</b><br>The Norwegian EPD Foundation<br>Post Box 5250 Majorstuen, 0303 Oslo, Norway | Phone: +47 23 08 80 00<br>e-mail: post@epd-norge.no<br>web: www.epd-norge.no          |
|  | <b>Owner of the declaration</b><br>Flokk AS<br>Drammensveien 145, 0277 Oslo  | Phone: 0047 98 25 68 30<br>e-mail: atle.messel@flok.com<br>web: https://www.flokk.com |
|  | <b>Author of the Life Cycle Assessment</b><br>LCA.no AS<br>Dokka 6B 1671 Kråkerøy                                    | Phone: +47 916 50 916<br>e-mail: post@lca.no<br>web: www.lca.no                       |
|  | <b>Developer of EPD generator</b><br>LCA.no AS<br>Dokka 1C 1671 Kråkerøy   | Phone: +47 916 50 916<br>e-mail: post@lca.no<br>web: www.lca.no                       |