

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

HAGAB®

IRHA Iris damper
HAGAB INDUSTRI AB



EPD HUB, HUB-4516

Published on 23.11.2025, last updated on 23.11.2025, valid until 22.11.2030

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025



GENERAL INFORMATION

Manufacturer	
Manufacturer	Hagab Industri AB
Address	Industrivägen 5, 562 41 Taberg
Contact details	info@hagab.com
Website	www.hagab.com

EPD standards, scope and verification	
Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	Not Applicable
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Oscar Ternström Ampiro Group AB
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
EPD verifier	Yazan Babour, as an authorized verifier acting for EPD Hub Limited

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

Product	
Product name	IRHA Iris damper
Place(s) of raw material origin	China
Place of production	Sweden
Place(s) of installation and use	Sweden
Period for data	2024
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	-0,54% to +0,54%
A1-A3 Specific data (%)	8,25

Environmental data summary	
Declared unit	1 kg of iris damper
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	3,73E+00
GWP-total, A1-A3 (kgCO ₂ e)	3,06E+00
Secondary material, inputs (%)	8,87
Secondary material, outputs (%)	91,1
Total energy use, A1-A3 (kWh)	16,9
Net freshwater use, A1-A3 (m ³)	1,73

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

At Hagab, we are driven by the ambition to develop sustainable, safe, and easy-to-use products. That's why we're more than willing to go the extra mile to find secure alternatives and smart solutions - so that you, as our customer, don't have to.

Our development and production take place locally in Taberg, just south of Jönköping. Today, we are about 30 employees with an annual turnover of just under SEK 80 million. Hagab is part of the Herenco Group - a Jönköping-based, family-owned company now in its fourth generation, with 157 years of history. The group has a turnover of SEK 3.5 billion and around 1,100 employees.

PRODUCT DESCRIPTION

IRHA is an iris damper designed for regulating airflow in circular ventilation ducts.

The blade design provides uniform, concentric throttling and delivers a smooth flow pattern with low noise levels.

The damper's construction enables simple and reliable flow measurement. It is well suited for built-in installation thanks to its compact size and meets airtightness class C. The control (handle) is made of TPU and PC, the measurement nipple of PP, and the seals of rubber.

This EPD covers several sizes of Iris dampers. The sizes in diameter are: Ø80mm, Ø100mm, Ø125mm, Ø160mm, Ø200mm, Ø250mm, Ø315mm, Ø400mm, Ø500mm, Ø630mm, Ø800mm.

Further information can be found at: www.hagab.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	94%	China
Minerals	0%	
Fossil materials	6%	China
Bio-based materials	0%	

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	-0,175

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of iris damper
Mass per declared unit	1 kg

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage								End of life stage				Beyond the system boundaries	
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7		C1	C2	C3	C4	D	
x	x	x	x	x	MND	MND	MND	MND	MND	MND	MND		x	x	x	x	x	
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

Modules not declared = MND. Modules not relevant = MNR.

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

A Swedish-based approach is used in modelling the electricity mix utilized in the factory.

The materials are sourced and delivered at our facility, 95% of the distance is assumed to be freight by container ship.

During our assembly process, no loss occurs. All the electricity and heating used for these processes are accounted for based on sales volume. The finished product is packed in a cardboard box and placed on an appropriate wooden pallet for the specific size.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

The IRHA Iris damper are mostly sold locally therefore a 100 km transportation by Euro 6 lorry is assumed.

The product is assumed to be installed manually without any fuel consumption. A5 involves waste treatment.

The waste treatment of the pallet is modelled according to Eurostat & PSR-0014 v2 (2023) where 32% are recycled, 30% incinerated for energy recovery and 38% are sent to landfill. A transport distance of 50 km is assumed.

PRODUCT USE AND MAINTENANCE (B1-B7)

The environmental impact of the use phase for this product can be neglected therefore this phase has not been included in the analysis. Further, air, soil, and water impacts during the use phase have not been studied. Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

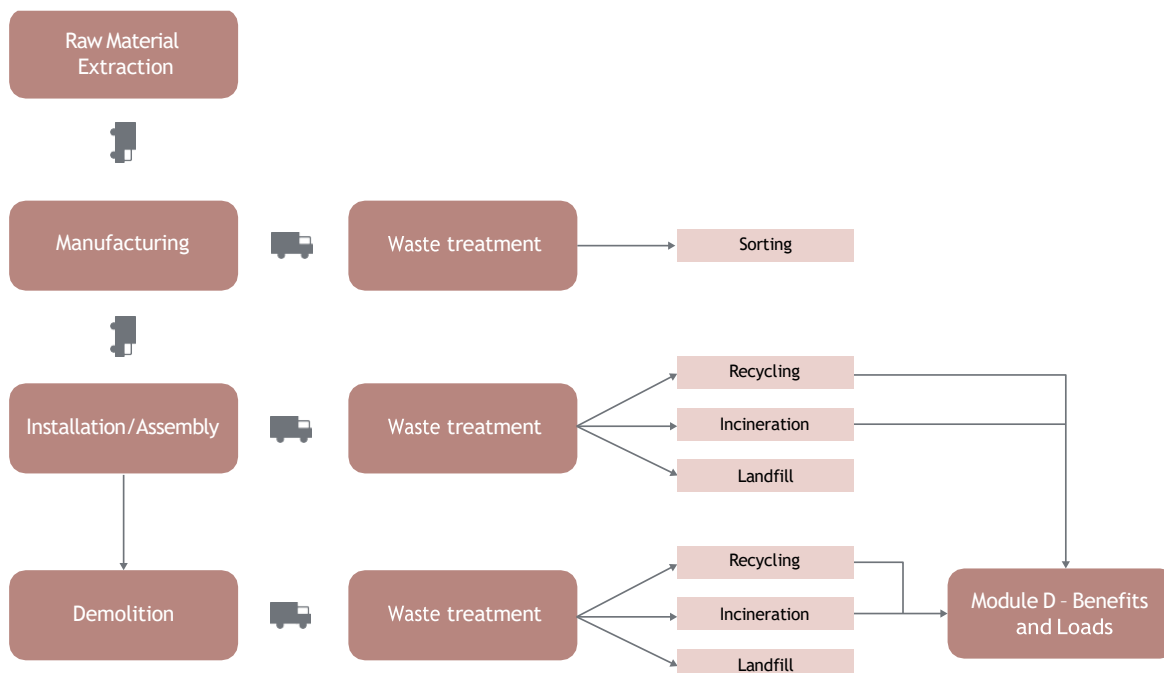
The modelled scenario for EOL is based on recycling, incineration and landfill. At end of life, the product is assumed to be disassembled manually. C2 involves the transportation of waste which is assumed to be 50 km with a Euro 5 lorry. C3 covers both the sorting and pressing of iron scrap and incineration of plastic materials. C4 includes the waste disposal processes where 5% put in landfill, based on national and EU statistics. For the D includes the loads from recycling and zbenefits of avoiding virgin production. Exported energies from incineration is also accounted for.

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

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MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging material	No allocation
Ancillary materials	Not applicable
Manufacturing energy and waste	Allocated by revenue

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Based on a representative product
Variation in GWP-fossil for A1-A3, %	-0,54% to +0,54%

The only difference among these products covered by the EPD are the size. The processes and materials are the same and difference between sizes when the unit kg is used is assumed to be negligible.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

ENVIRONMENTAL IMPACT DATA

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

CORE ENVIRONMENTAL IMPACT INDICATORS - EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP - total ¹⁾	kg CO ₂ e	3,24E+00	2,30E-01	-4,15E-01	3,06E+00	2,62E-02	6,53E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,48E-03	1,02E-01	2,08E-03	-1,27E+00
GWP - fossil	kg CO ₂ e	3,28E+00	2,30E-01	2,15E-01	3,73E+00	2,62E-02	1,29E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,48E-03	1,02E-01	2,08E-03	-1,44E+00
GWP - biogenic	kg CO ₂ e	-3,77E-02	4,16E-05	-6,39E-01	-6,77E-01	5,25E-06	6,40E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,07E-06	-4,44E-05	-9,81E-07	1,71E-01
GWP - LULUC	kg CO ₂ e	9,53E-04	1,17E-04	9,70E-03	1,08E-02	9,39E-06	1,74E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,20E-06	2,64E-05	2,73E-07	-5,23E-04
Ozone depletion pot.	kg CFC-11e	1,11E-08	3,33E-09	5,60E-09	2,00E-08	5,21E-10	1,99E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,33E-10	2,91E-10	1,29E-11	-6,64E-09
Acidification potential	mol H ⁺ e	8,46E-03	4,63E-03	1,04E-03	1,41E-02	5,44E-05	6,83E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,16E-05	2,54E-04	3,28E-06	-5,78E-03
EP-freshwater ²⁾	kg Pe	1,27E-04	1,10E-05	7,82E-05	2,16E-04	1,76E-06	3,34E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,37E-07	1,33E-05	4,14E-08	-6,06E-04
EP-marine	kg Ne	1,67E-03	1,17E-03	3,64E-04	3,21E-03	1,31E-05	7,78E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,03E-05	6,02E-05	7,01E-06	-1,26E-03
EP-terrestrial	mol Ne	1,72E-02	1,30E-02	3,28E-03	3,35E-02	1,41E-04	2,70E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,12E-04	6,63E-04	1,36E-05	-1,38E-02
POCP ("smog") ³⁾	kg NMVOCe	6,53E-03	3,67E-03	1,17E-03	1,14E-02	9,05E-05	9,03E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,41E-05	1,94E-04	5,24E-06	-4,81E-03
ADP-minerals & metals ⁴⁾	kg Sbe	1,99E-05	3,72E-07	1,85E-06	2,21E-05	8,71E-08	4,27E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,10E-08	1,44E-06	8,46E-10	-1,36E-05
ADP-fossil resources	MJ	3,98E+01	3,00E+00	1,06E+01	5,34E+01	3,68E-01	1,73E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,33E-01	2,86E-01	1,10E-02	-1,44E+01
Water use ⁵⁾	m ³ e depr.	7,98E-01	1,09E-02	5,29E-01	1,34E+00	1,83E-03	4,68E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,19E-04	7,69E-03	3,98E-05	-2,61E-01

1) GWP = Global Warming Potential.

2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO₄e.

3) POCP = Photochemical ozone formation.

4) ADP = Abiotic depletion potential.

5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS - EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	3,07E-07	1,26E-08	1,59E-08	3,36E-07	1,93E-09	1,17E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,59E-10	3,37E-09	7,45E-11	-9,39E-08
Ionizing radiation ⁶⁾	kBq U235e	4,84E-02	1,85E-03	5,98E-01	6,48E-01	4,75E-04	5,24E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,08E-04	2,39E-03	8,45E-06	1,68E-02
Ecotoxicity (freshwater)	CTUe	1,80E+01	3,01E-01	1,35E+00	1,96E+01	4,89E-02	1,20E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,10E-02	2,01E-01	6,12E-03	-3,47E+00
Human toxicity, cancer	CTUh	1,78E-09	4,49E-11	5,89E-10	2,41E-09	4,39E-12	6,80E-12	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,61E-12	2,12E-11	1,40E-13	-2,33E-10
Human tox. non-cancer	CTUh	9,06E-09	1,21E-09	2,84E-09	1,31E-08	2,33E-10	3,72E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,34E-11	1,34E-09	1,81E-11	-1,14E-08
SQP ⁷⁾	-	3,74E+00	1,34E+00	4,82E+01	5,32E+01	2,22E-01	1,57E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,15E-02	5,44E-01	2,30E-02	-4,45E+00

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	8,67E-01	3,01E-02	8,47E+00	9,36E+00	6,44E-03	-5,59E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,83E-03	5,22E-02	1,33E-04	-2,94E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	5,59E+00	5,59E+00	0,00E+00	-5,59E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,44E-01
Total use of renew. PER	MJ	8,67E-01	3,01E-02	1,41E+01	1,49E+01	6,44E-03	-1,12E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,83E-03	5,22E-02	1,33E-04	-1,24E+00
Non-re. PER as energy	MJ	3,78E+01	3,00E+00	1,03E+01	5,11E+01	3,68E-01	1,73E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,33E-01	-1,50E+00	-5,81E-01	-1,46E+01
Non-re. PER as material	MJ	1,74E+00	0,00E+00	3,22E-01	2,06E+00	0,00E+00	-3,22E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,31E+00	-4,31E-01	7,15E-01
Total use of non-re. PER	MJ	3,96E+01	3,00E+00	1,06E+01	5,32E+01	3,68E-01	-1,49E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,33E-01	-2,82E+00	-1,01E+00	-1,39E+01
Secondary materials	kg	8,87E-02	1,37E-03	7,69E-02	1,67E-01	1,71E-04	1,34E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,97E-05	3,94E-04	3,18E-06	7,72E-01
Renew. secondary fuels	MJ	1,12E-03	8,29E-06	1,69E-01	1,70E-01	2,16E-06	1,21E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,60E-07	1,59E-05	6,30E-08	-7,22E-05
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m³	1,72E+00	2,98E-04	1,25E-02	1,73E+00	5,01E-05	-4,11E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,77E-05	1,76E-04	-4,97E-05	-3,99E-03

8) PER = Primary energy resources.

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

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END OF LIFE - WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2,94E-02	4,41E-03	1,54E-02	4,92E-02	5,35E-04	1,30E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,32E-04	2,87E-03	1,45E-05	-4,56E-01
Non-hazardous waste	kg	8,00E-01	6,95E-02	3,61E-01	1,23E+00	1,13E-02	7,40E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,35E-03	9,95E-02	7,67E-02	-3,91E+00
Radioactive waste	kg	9,94E-06	4,51E-07	1,28E-04	1,39E-04	1,18E-07	1,31E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,65E-08	6,11E-07	2,06E-09	5,85E-06

END OF LIFE - OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,49E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	9,07E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	4,10E-03	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,22E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy - Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,19E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy - Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,03E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

ENVIRONMENTAL IMPACTS - EN 15804+A1, CML

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO ₂ e	3,27E+00	2,29E-01	2,25E-01	3,72E+00	2,60E-02	2,57E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,43E-03	1,02E-01	2,00E-03	-1,43E+00
Ozone depletion Pot.	kg CFC-11e	9,87E-09	2,65E-09	4,60E-09	1,71E-08	4,14E-10	1,60E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,06E-10	2,40E-10	1,03E-11	-6,72E-09
Acidification	kg SO ₂ e	7,00E-03	3,68E-03	7,83E-04	1,15E-02	4,37E-05	5,09E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,42E-05	2,03E-04	2,43E-06	-4,67E-03
Eutrophication	kg PO ₄ 3e	1,85E-03	4,33E-04	4,27E-03	6,56E-03	1,10E-05	2,59E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,89E-06	3,10E-05	1,10E-06	-8,53E-04
POCP ("smog")	kg C ₂ H ₄ e	1,22E-03	1,91E-04	9,92E-05	1,51E-03	4,62E-06	6,99E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,17E-06	1,22E-05	4,77E-07	-7,10E-04
ADP-elements	kg Sbe	1,95E-05	3,65E-07	1,85E-06	2,17E-05	8,51E-08	4,13E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,02E-08	1,43E-06	8,26E-10	-1,36E-05
ADP-fossil	MJ	1,73E+04	2,97E+00	2,66E+00	1,73E+04	3,60E-01	1,64E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,31E-01	2,45E-01	1,08E-02	-1,49E+01

ADDITIONAL INDICATOR - GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ⁹⁾	kg CO ₂ e	3,28E+00	2,30E-01	2,24E-01	3,74E+00	2,62E-02	1,29E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,48E-03	1,02E-01	2,08E-03	-1,44E+00

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows - CH₄ fossil, CH₄ biogenic and Dinitrogen monoxide - were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO₂ is set to zero.

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

HAGAB®

SCENARIO DOCUMENTATION

MANUFACTURING ENERGY SCENARIO DOCUMENTATION

Scenario parameter	Value
Electricity data source and quality	Market for electricity, medium voltage (Reference product: electricity, medium voltage)
Electricity CO ₂ e/kWh	0,0254
District heating data source and quality	Heat production, light fuel oil, at boiler 100kW condensing, non-modulating (Reference product: heat, central or small-scale, other than natural gas)
District heating CO ₂ e/kWh	0,027

TRANSPORT SCENARIO DOCUMENTATION A4

Scenario parameter	Value
Fuel and vehicle type. Eg, electric truck, diesel powered truck	Diesel powered truck
Average transport distance, km	100
Capacity utilization (including empty return) %	50
Volume capacity utilization factor	1

INSTALLATION SCENARIO DOCUMENTATION A5

Scenario information	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	0
Water use / m ³	0
Other resource use / kg	0
Quantitative description of energy type (regional mix) and consumption during the installation process / kWh or MJ	0
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	0
Output materials (specified by type) as result of waste processing at the building site e.g. collection for recycling, for energy recovery, disposal (specified by route) / kg	0,37798
Direct emissions to ambient air, soil and water / kg	0

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez

Tool verification validity: 27 March 2025 - 26 March 2028

Yazan Babour, as an authorized verifier acting for EPD Hub Limited

21.11.2025




ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

APPENDIX A: PRODUCT VARIATIONS

The table in this appendix can be used to convert the results of the LCA presented in this EPD to specific sizes and configurations of the IRHA Iris damper that are available at HAGAB.

Article	Name	Diameter (mm)	Length (mm)	Weight (kg)
IR008	IRHA	80	115	0,5
IR010	IRHA	100	115	0,6
IR010-SYRA	IRHA	100	115	0,6
IR010-VIT	IRHA	100	115	0,6
IR012	IRHA	125	115	0,7
IR012-SYRA	IRHA	125	115	0,7
IR012-VIT	IRHA	125	115	0,7
IR016	IRHA	160	115	1,0
IR016-SYRA	IRHA	160	115	1,0
IR016-VIT	IRHA	160	115	1,0
IR020	IRHA	200	120	1,5
IR020-SYRA	IRHA	200	120	1,5
IR020-VIT	IRHA	200	120	1,5
IR025	IRHA	250	135	1,9
IR025-SYRA	IRHA	250	135	1,9
IR025-VIT	IRHA	250	135	1,9
IR031	IRHA	315	140	2,5
IR031-SYRA	IRHA	315	140	2,5
IR031-VIT	IRHA	315	140	2,5
IR040	IRHA	400	150	6,1
IR040-SYRA	IRHA	400	150	6,1
IR050	IRHA	500	150	8,8
IR050-SYRA	IRHA	500	150	8,8
IR063	IRHA	630	155	15,8
IR063-SYRA	IRHA	630	155	15,8
IR080	IRHA	800	285	24,8
IR080-SYRA	IRHA	800	285	24,8