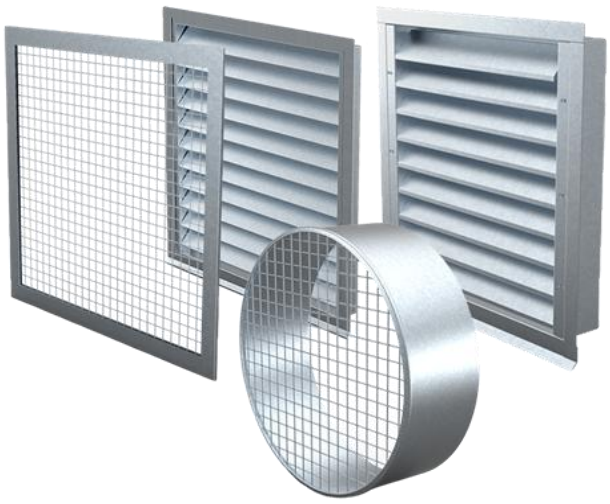
ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

Louvres – metal-coated steel
HAGAB INDUSTRI AB



EPD HUB, HUB-2348

PUBLISHED ON 5 DECEMBER 2024, LAST UPDATED ON 5 DECEMBER 2024, VALID UNTIL 5 DECEMBER 2024

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GENERAL INFORMATION

Manufacturer	
Manufacturer	Hagab Industri AB
Address VP-002	Industrivägen 5 Taberg, Sweden
Contact details VP-003	info@hagab.com
Website	hagab.com/

EPD standards, scope and verification	
Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR version 1.1, 5 Dec 2023
Sector	Manufactured product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author VP-004	Petter Ydrestrand, HAGAB
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
EPD verifier VP-055	Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited

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	Louvres – metal-coated steel
Additional labels	RYHA, IYHA, CTHA, RTHA
Product reference	-
Place of production	Taberg, Sweden
Period for data	Calender year 2023
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	-

Environmental data summary	
Declared unit	1 kg of coated steel louvre
Declared unit mass	1 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	4,12E+00
GWP-total, A1-A3 ($kgCO_2e$)	2,69E+00
Secondary material, inputs (%)	3,22
Secondary material, outputs (%)	95
Total energy use, A1-A3 (kWh)	19,4
Total water use, A1-A3 (m^3e)	0,08

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

HAGAB is one of Sweden´s leading companies which develop, manufacture and sell advanced solutions for fire protection and ventilation. Since 1985, HAGAB has made everyday life easier and safer for our customers.

PRODUCT DESCRIPTION

Hagab Louvres are produced locally at our manufacturing site in Taberg, south of Jönköping. Depending on the specific requirements, we provide different types of louvres, including rectangular, circular, and reinforced. Our products meet the demands of both performance and esthetical properties.

We offer louvres in a wide range of sizes and materials including, hot-dip galvanized, Zink-Magnesium, Aluminium-Zink and stainless steel. We also offer our customers the flexibility to order a Louvre in a specialised size or material. With our powder coating facility, we offer the customer a wide range of colours to choose from.

This EPD is made from a coated metal RYHA in size 600x600 [mm]. In the annex to this EPD, a scaling table is provided to reflect the GWP impacts for the range of products produced in the same plant.

Further information can be found at https://hagab.com/.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	100%	Europe
Minerals	-	
Fossil materials	-	
Bio-based materials	-	

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	0.392

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of coated steel louvre
Mass per declared unit	1 kg
Functional unit	-
Reference service life	-

SUBSTANCES, REACH - VERY HIGH CONCERN

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

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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	MNR	x	x	x	x
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse

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. The raw materials consist of coated steel and are transported approximately 350 km distance where a Euro 6 lorry is assumed. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facility are included in this stage.

The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission. Further, the electricity for punching, bending and heating is accounted for based on the part of the yearly volume of products in the factory. A scrap factor of 20% is assumed for the punching where the scrap metal is 100% recycled due to close collaborations with partners. The finished product is packed on an appropriate wooden pallet for the specific size, plastered, and anchored with plastic strips.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurring from final product delivery to the construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions. The louvres are mostly sold locally therefore 150 km transportation by Euro 6 lorry is assumed.

The product is assumed to be installed by hand; therefore, no fuel consumption is accounted for. A5 involves waste treatment of packaging where 33% of the plastering packaging is assumed to be recycled, 43% incarnated for energy recovery and 24% sent to landfill based on EuroPal (2023). The waste treatment of the pallet is modelled according to Eurostat & PSR-0014 v2 (2023) where 30% are recycled, 30% incarnated for energy recovery and 40% 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.

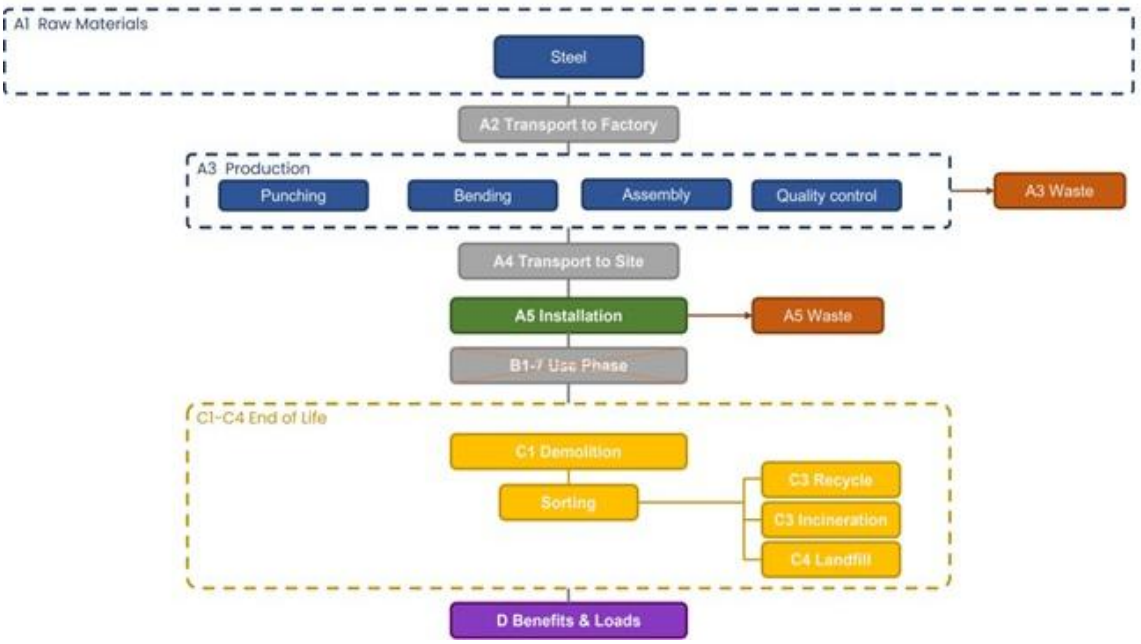
PRODUCT END OF LIFE (C1-C4, D)

C1 covers the energy used for deconstructing the product where no construction equipment is assumed to be involved, therefore the C1 phase can be neglected for this product. C2 involves the transportation of waste which is assumed to be 50 km with a Euro 6 lorry. C3 covers the sorting and pressing of iron scrap. C4 includes the waste disposal processes where 95% of the steel is assumed to be recycled and 5% put in landfill, based on national and EU statistics. D includes the loads from recycling the steel and the benefit of avoiding virgin production of steel.

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

LIFE CYCLE DIAGRAM



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 materials and energy consumption. All inputs and outputs of the unit processes, for which data is available, 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.

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 materials	No allocation
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	-

This EPD is product and factory-specific and does not contain average calculations. The table in Appendix A displays the weight of every standard product used to translate this EPD's result to a specific product size.

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. Ecoinvent v3.8 and One Click LCA databases were used as sources of environmental data.

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

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_2e	3,65E+00	4,16E-02	-1,01E+00	2,69E+00	2,82E-02	1,54E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,15E-03	2,08E-02	2,64E-04	-1,85E+00
GWP – fossil	kg CO_2e	3,65E+00	4,16E-02	4,26E-01	4,12E+00	2,82E-02	1,00E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,14E-03	2,08E-02	2,63E-04	-1,85E+00
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	-1,44E+00	-1,44E+00	0,00E+00	1,44E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	4,16E-03	1,55E-05	4,13E-03	8,31E-03	1,04E-05	1,57E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,26E-06	2,73E-05	2,49E-07	-2,95E-04
Ozone depletion pot.	kg $CFC_{-11}e$	2,21E-07	9,59E-09	4,05E-08	2,71E-07	6,48E-09	3,06E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,89E-09	2,57E-09	1,07E-10	-7,19E-08
Acidification potential	mol H^+e	8,14E-02	1,68E-04	2,23E-03	8,38E-02	1,19E-04	1,31E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,31E-05	2,64E-04	2,48E-06	-7,57E-03
EP-freshwater[2)]	kg Pe	6,56E-05	3,35E-07	2,41E-05	9,00E-05	2,31E-07	4,86E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,81E-08	1,12E-06	2,76E-09	-7,62E-05
EP-marine	kg Ne	5,66E-03	4,85E-05	5,57E-04	6,26E-03	3,54E-05	5,97E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,62E-06	5,58E-05	8,57E-07	-1,55E-03
EP-terrestrial	mol Ne	3,23E-01	5,36E-04	6,16E-03	3,30E-01	3,91E-04	5,14E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,13E-05	6,45E-04	9,43E-06	-1,81E-02
POCP ("smog")[3)]	kg NMVOCe	1,58E-02	1,74E-04	2,28E-03	1,82E-02	1,25E-04	1,49E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,97E-05	1,77E-04	2,74E-06	-9,24E-03
ADP-minerals & metals[4)]	kg Sbe	1,01E-02	1,05E-07	3,71E-06	1,01E-02	6,60E-08	6,78E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,94E-08	2,80E-06	6,05E-10	-3,53E-05
ADP-fossil resources	MJ	4,27E+01	6,25E-01	1,48E+01	5,81E+01	4,23E-01	2,84E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,21E-01	2,82E-01	7,22E-03	-1,60E+01
Water use[5)]	m^3e depr.	1,64E+00	2,81E-03	4,56E-01	2,10E+00	1,89E-03	2,51E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,67E-04	5,47E-03	2,29E-05	-3,35E-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.

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ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

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	6,60E-07	4,60E-09	3,04E-08	6,95E-07	3,24E-09	2,06E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,56E-10	3,45E-09	4,99E-11	-1,23E-07
Ionizing radiation[6]	kBq U235e	1,37E-01	3,01E-03	4,41E-01	5,81E-01	2,01E-03	2,44E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,36E-04	3,15E-03	3,27E-05	6,68E-02
Ecotoxicity (freshwater)	CTUe	1,42E+02	5,56E-01	9,05E+00	1,52E+02	3,80E-01	3,17E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,01E-01	1,28E+00	4,71E-03	-6,61E+01
Human toxicity, cancer	CTUh	1,82E-08	1,41E-11	1,81E-09	2,00E-08	9,34E-12	2,67E-11	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,11E-12	3,91E-11	1,18E-13	1,57E-08
Human tox. non-cancer	CTUh	2,02E-07	5,50E-10	7,86E-09	2,10E-07	3,76E-10	9,68E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,90E-11	1,75E-09	3,08E-12	-4,44E-08
SQP[7]	-	9,06E+00	6,83E-01	1,17E+02	1,26E+02	4,87E-01	3,74E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,61E-02	5,67E-01	1,54E-02	-5,79E+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.

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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	3,38E+00	7,31E-03	1,10E+01	1,44E+01	4,76E-03	1,41E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,76E-03	5,00E-02	6,27E-05	-1,35E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,26E+01	1,26E+01	0,00E+00	-1,26E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	3,38E+00	7,31E-03	2,36E+01	2,70E+01	4,76E-03	-1,26E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,76E-03	5,00E-02	6,27E-05	-1,35E+00
Non-re. PER as energy	MJ	4,28E+01	6,25E-01	1,17E+01	5,51E+01	4,23E-01	2,84E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,21E-01	2,82E-01	7,22E-03	-1,61E+01
Non-re. PER as material	MJ	0,00E+00	0,00E+00	3,09E+00	3,09E+00	0,00E+00	-3,09E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	4,28E+01	6,25E-01	1,48E+01	5,82E+01	4,23E-01	-2,80E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,21E-01	2,82E-01	7,22E-03	-1,61E+01
Secondary materials	kg	3,22E-02	1,79E-04	4,74E-02	7,98E-02	1,17E-04	2,48E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,13E-05	3,14E-04	1,52E-06	1,07E+00
Renew. secondary fuels	MJ	3,51E-05	1,83E-06	4,24E-01	4,24E-01	1,18E-06	2,43E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,54E-07	1,63E-05	3,96E-08	-1,71E-04
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	m^3	6,97E-02	8,07E-05	1,25E-02	8,23E-02	5,48E-05	1,17E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,55E-05	1,65E-04	7,90E-06	-3,87E-03

8) PER = Primary energy resources.

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HAGAB®

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	7,03E-01	8,12E-04	2,78E-02	7,32E-01	5,61E-04	5,03E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,38E-04	1,92E-03	0,00E+00	-6,18E-01
Non-hazardous waste	kg	1,02E+01	1,35E-02	7,12E-01	1,09E+01	9,21E-03	7,57E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,45E-03	6,12E-02	5,00E-02	-3,03E+00
Radioactive waste	kg	1,35E-04	4,19E-06	1,06E-04	2,46E-04	2,83E-06	9,22E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,34E-07	1,65E-06	0,00E+00	5,34E-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	9,09E-07	0,00E+00	0,00E+00	9,09E-07	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	5,51E-03	0,00E+00	2,00E-01	2,06E-01	0,00E+00	3,20E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	9,50E-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	3,26E-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	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,04E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

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_2e	3,63E+00	4,12E-02	4,18E-01	4,09E+00	2,79E-02	1,25E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,07E-03	2,05E-02	2,58E-04	-1,75E+00
Ozone depletion Pot.	kg $CFC_{-11}e$	2,10E-07	7,59E-09	3,40E-08	2,52E-07	5,13E-09	2,47E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,50E-09	2,08E-09	8,43E-11	-8,04E-08
Acidification	kg SO_2e	4,81E-02	1,32E-04	1,76E-03	5,00E-02	9,26E-05	9,76E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,90E-05	2,13E-04	1,87E-06	-6,12E-03
Eutrophication	kg $PO_4^{3}e$	1,23E-02	2,98E-05	9,81E-04	1,33E-02	2,11E-05	1,30E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,10E-06	7,05E-05	4,03E-07	-3,14E-03
POCP (“smog”)	kg C_2H_4e	1,65E-03	5,29E-06	1,86E-04	1,84E-03	3,62E-06	9,64E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,59E-07	8,07E-06	7,84E-08	-1,06E-03
ADP-elements	kg Sbe	1,01E-02	1,02E-07	3,68E-06	1,01E-02	6,39E-08	6,49E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,88E-08	2,80E-06	5,96E-10	-3,53E-05
ADP-fossil	MJ	4,27E+01	6,25E-01	1,48E+01	5,81E+01	4,23E-01	2,84E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,21E-01	2,82E-01	7,22E-03	-1,61E+01

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, do- cuments and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online

This EPD has been generated by One Click LCA EPD genera- tor, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environ- mental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out,
the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

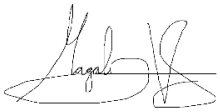
I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the deve- lopment of the declaration and have no conflicts of interest regarding this verification.

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited

05.12.2024



EPD Hub
VERIFIED ISO 14025

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

APPENDIX A: PRODUCT VARIATIONS

As mentioned in earlier sections, the table in this appendix can convert the results of the LCA presented in this EPD to all the louvres below that are available at HAGAB. The environmental impact for each unique article can thus be calculated by multiplying the results presented in this EPD by the weight of the specific article.

IYHA			
Article nr	Size [WxH] mm	Weight	GWP-Fossil
IY020020	200 x 200	1,8	7,42
IY030030	300 x 300	4,1	16,32
IY040040	400 x 400	7,2	29,02
IY050050	500 x 500	11,3	45,34
IY060060	600 x 600	16,2	65,29
IY070070	700 x 700	22,1	88,86
IY080080	800 x 800	28,8	116,06
IY090090	900 x 900	36,5	146,89
IY100100	1000 x 1000	45,0	181,35
IY110110	1100 x 1100	54,5	219,43
IY120120	1200 x 1200	64,8	261,14

CTHA			
Article nr	Size Ø mm	Weight	GWP-Fossil
CT008	80	0,1	0,41
CT010	100	0,1	0,40
CT012	125	0,2	0,60
CT016	160	0,2	0,81
CT020	200	0,3	1,21
CT025	250	0,4	1,41
CT031	315	0,6	2,42
CT040	400	0,7	2,82
CT050	500	1,0	4,03
CT063	630	1,2	4,84
CT080	800	2,8	11,28
CT100	1000	4,2	16,93

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ENVIRONMENTAL PRODUCT DECLARATION

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HAGAB®

RTHA			
Article nr	Size [WxH] mm	Weight	GWP-Fossil
RT015015	150 x 150	0,1	0,37
RT020015	200 x 150	0,1	0,48
RT020020	200 x 200	0,2	0,64
RT025015	250 x 150	0,2	0,60
RT025020	250 x 200	0,2	0,81
RT025025	250 x 250	0,3	1,01
RT030015	300 x 150	0,2	0,73
RT030020	300 x 200	0,2	0,97
RT030025	300 x 250	0,3	1,21
RT030030	300 x 300	0,4	1,45
RT040015	400 x 150	0,2	0,97
RT040020	400 x 200	0,3	1,29
RT040025	400 x 250	0,4	1,61
RT040030	400 x 300	0,5	1,93
RT040040	400 x 400	0,6	2,58
RT045045	450 x 450	0,8	3,26
RT050015	500 x 150	0,3	1,21
RT050020	500 x 200	0,4	1,61
RT050025	500 x 250	0,5	2,02
RT050030	500 x 300	0,6	2,42
RT050040	500 x 400	0,8	3,22
RT050050	500 x 500	1,0	4,03
RT060015	600 x 150	0,4	1,45
RT060020	600 x 200	0,5	1,93
RT060025	600 x 250	0,6	2,42
RT060030	600 x 300	0,7	2,90
RT060040	600 x 400	1,0	3,87
RT060050	600 x 500	1,2	4,84
RT060060	600 x 600	1,4	5,80
RT070015	700 x 150	0,4	1,69
RT070020	700 x 200	0,6	2,26
RT070025	700 x 250	0,7	2,82
RT070030	700 x 300	0,8	3,39
RT070040	700 x 400	1,1	4,61
RT070050	700 x 500	1,4	5,77
RT070060	700 x 600	1,7	6,92
RT070070	700 x 700	2,0	8,08
RT080015	800 x 150	0,5	1,98
RT080020	800 x 200	0,6	2,64
RT080025	800 x 250	0,8	3,30
RT080030	800 x 300	1,0	3,96
RT080040	800 x 400	1,3	5,27
RT080050	800 x 500	1,6	6,59
RT080060	800 x 600	1,9	7,91
RT080070	800 x 700	2,2	9,23
RT080080	800 x 800	2,6	10,55
RT090015	900 x 150	0,5	2,22
RT090020	900 x 200	0,7	2,97
RT090025	900 x 250	0,9	3,71
RT090030	900 x 300	1,1	4,45
RT090040	900 x 400	1,4	5,93
RT090050	900 x 500	1,8	7,42
RT090060	900 x 600	2,2	8,90
RT090070	900 x 700	2,5	10,38
RT090080	900 x 800	2,9	11,87
RT090090	900 x 900	3,2	13,35
RT100015	1000 x 150	0,6	2,47
RT100020	1000 x 200	0,8	3,30
RT100025	1000 x 250	1,0	4,12
RT100030	1000 x 300	1,2	4,94
RT100040	1000 x 400	1,6	6,59
RT100050	1000 x 500	2,0	8,24
RT100060	1000 x 600	2,4	9,89
RT100070	1000 x 700	2,8	11,54
RT100080	1000 x 800	3,2	13,18
RT100090	1000 x 900	3,6	14,83
RT100100	1000 x 1000	4,0	16,48

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HAGAB®

RYHA			
Article nr	Size [WxH] mm	Weight	GWP-Fossil
RY010010	100 x 100	0,8	3,3
RY015015	150 x 150	0,5	2,1
RY015020	150 x 200	1,4	5,7
RY015025	150 x 250	1,6	6,7
RY015030	150 x 300	1,9	7,6
RY020010	200 x 100	1,1	4,3
RY020015	200 x 150	1,3	5,4
RY020020	200 x 200	1,0	4,1
RY020025	200 x 250	1,8	7,4
RY020030	200 x 300	2,1	8,5
RY020040	200 x 400	2,6	10,6
RY025015	250 x 150	1,4	5,9
RY025020	250 x 200	1,7	7,1
RY025025	250 x 250	1,4	5,8
RY025030	250 x 300	2,3	9,3
RY030015	300 x 150	1,6	6,5
RY030020	300 x 200	1,9	7,7
RY030025	300 x 250	2,2	9,0
RY030030	300 x 300	1,5	6,2
RY030040	300 x 400	3,1	12,6
RY030050	300 x 500	3,7	15,0
RY030060	300 x 600	4,2	17,5
RY030070	300 x 700	4,8	19,9
RY030080	300 x 800	5,4	22,3
RY030090	300 x 900	6,0	24,8
RY030100	300 x 1000	6,6	27,2
RY030110	300 x 1100	7,2	29,6
RY030120	300 x 1200	7,8	32,1
RY030130	300 x 1300	8,4	34,5
RY030140	300 x 1400	1,5	6,3
RY030150	300 x 1500	1,6	6,5
RY030160	300 x 1600	1,6	6,8
RY030170	300 x 1700	1,7	7,0
RY030180	300 x 1800	1,8	7,3
RY030190	300 x 1900	1,8	7,5
RY030200	300 x 2000	1,9	7,7
RY035050	350 x 500	3,9	16,2
RY040015	400 x 150	1,9	7,7
RY110080	1100 x 800	12,2	50,13
RY110090	1100 x 900	13,4	55,4
RY110100	1100 x 1000	14,7	60,7
RY110110	1100 x 1100	16,0	66,0
RY110120	1100 x 1200	17,3	71,2
RY110130	1100 x 1300	18,6	76,5
RY110140	1100 x 1400	19,9	81,8
RY110150	1100 x 1500	21,1	87,1
RY110160	1100 x 1600	22,4	92,4
RY110170	1100 x 1700	23,7	97,6
RY110180	1100 x 1800	25,0	102,9
RY110190	1100 x 1900	26,3	108,2
RY110200	1100 x 2000	27,5	113,5
RY120030	1200 x 300	6,2	25,4
RY120040	1200 x 400	7,5	31,1
RY120050	1200 x 500	8,9	36,7
RY120060	1200 x 600	10,3	42,3
RY120070	1200 x 700	11,6	48,0
RY120080	1200 x 800	13,0	53,6
RY120090	1200 x 900	14,4	59,2
RY120100	1200 x 1000	15,7	64,9
RY120110	1200 x 1100	17,1	70,5
RY120130	1200 x 1300	19,9	81,8
RY120140	1200 x 1400	21,2	87,4
RY120150	1200 x 1500	22,6	93,1
RY120160	1200 x 1600	24,0	98,7
RY120170	1200 x 1700	25,3	104,3
RY120180	1200 x 1800	26,7	110,0
RY120190	1200 x 1900	28,1	115,6
RY120200	1200 x 2000	29,4	121,2
RY130030	1300 x 300	6,6	27,1
RY130040	1300 x 400	8,0	33,1
RY130050	1300 x 500	9,5	39,1
RY130060	1300 x 600	10,9	45,1
RY130070	1300 x 700	12,4	51,1
RY130080	1300 x 800	13,9	57,1
RY130090	1300 x 900	15,3	63,1
RY130100	1300 x 1000	16,8	69,1
RY130110	1300 x 1100	18,2	75,0
RY130120	1300 x 1200	19,7	81,0

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RY040020	400 x 200	2,2	8,88
RY040025	400 x 250	2,5	10,25
RY040030	400 x 300	2,9	11,61
RY040040	400 x 400	2,5	10,08
RY040050	400 x 500	4,2	17,07
RY040060	400 x 600	4,9	19,80
RY040070	400 x 700	5,6	22,52
RY040080	400 x 800	6,3	25,25
RY040090	400 x 900	6,9	27,98
RY040100	400 x 1000	7,6	30,70
RY040110	400 x 1100	8,3	33,43
RY040120	400 x 1200	9,0	36,16
RY040130	400 x 1300	9,6	38,89
RY040140	400 x 1400	10,3	41,61
RY040150	400 x 1500	11,0	44,34
RY040160	400 x 1600	11,7	47,07
RY040170	400 x 1700	12,4	49,79
RY040180	400 x 1800	13,0	52,52
RY040190	400 x 1900	13,7	55,25
RY040200	400 x 2000	14,4	57,98
RY050020	500 x 200	2,5	10,19
RY050030	500 x 300	3,3	13,27
RY050040	500 x 400	4,1	16,34
RY050050	500 x 500	3,5	14,11
RY050060	500 x 600	5,6	22,50
RY050070	500 x 700	6,3	25,57
RY050080	500 x 800	7,1	28,65
RY050090	500 x 900	7,9	31,72
RY050100	500 x 1000	8,6	34,80
RY050110	500 x 1100	9,4	37,87
RY050120	500 x 1200	10,2	40,95
RY050130	500 x 1300	10,9	44,02
RY050140	500 x 1400	11,7	47,10
RY050150	500 x 1500	12,5	50,18
RY050160	500 x 1600	13,2	53,25
RY050170	500 x 1700	14,0	56,33
RY050180	500 x 1800	14,7	59,40
RY050190	500 x 1900	15,5	62,48
RY050200	500 x 2000	16,3	65,56
RY060020	600 x 200	2,9	11,50

RY130130	1300 x 1300	21,1	85,13
RY130140	1300 x 1400	22,6	91,00
RY130150	1300 x 1500	24,0	96,86
RY130160	1300 x 1600	25,5	102,72
RY130170	1300 x 1700	26,9	108,58
RY130180	1300 x 1800	28,4	114,44
RY130190	1300 x 1900	29,9	120,30
RY130200	1300 x 2000	31,3	126,16
RY140030	1400 x 300	7,0	28,18
RY140040	1400 x 400	8,5	34,39
RY140050	1400 x 500	10,1	40,60
RY140060	1400 x 600	11,6	46,81
RY140070	1400 x 700	13,2	53,02
RY140080	1400 x 800	14,7	59,22
RY140090	1400 x 900	16,2	65,44
RY140100	1400 x 1000	17,8	71,65
RY140110	1400 x 1100	19,3	77,86
RY140120	1400 x 1200	20,9	84,07
RY140130	1400 x 1300	22,4	90,27
RY140140	1400 x 1400	23,9	96,48
RY140150	1400 x 1500	25,5	102,69
RY140160	1400 x 1600	27,0	108,90
RY140170	1400 x 1700	28,6	115,11
RY140180	1400 x 1800	30,1	121,32
RY140190	1400 x 1900	31,6	127,53
RY140200	1400 x 2000	33,2	133,74
RY150030	1500 x 300	7,4	29,83
RY150040	1500 x 400	9,0	36,39
RY150050	1500 x 500	10,7	42,95
RY150060	1500 x 600	12,3	49,51
RY150070	1500 x 700	13,9	56,07
RY150080	1500 x 800	15,5	62,62
RY150090	1500 x 900	17,2	69,18
RY150100	1500 x 1000	18,8	75,74
RY150110	1500 x 1100	20,4	82,30
RY150120	1500 x 1200	22,0	88,85
RY150130	1500 x 1300	23,7	95,41
RY150140	1500 x 1400	25,3	101,97
RY150150	1500 x 1500	26,9	108,53
RY150160	1500 x 1600	28,6	115,08

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RY060030	600 x 300	3,7	14,92
RY060040	600 x 400	4,6	18,35
RY060050	600 x 500	5,4	21,77
RY060060	600 x 600	5,0	20,15
RY060070	600 x 700	7,1	28,62
RY060080	600 x 800	8,0	32,04
RY060090	600 x 900	8,8	35,47
RY060100	600 x 1000	9,7	38,89
RY060110	600 x 1100	10,5	42,32
RY060120	600 x 1200	11,4	45,74
RY060130	600 x 1300	12,2	49,16
RY060140	600 x 1400	13,0	52,59
RY060150	600 x 1500	13,9	56,01
RY060160	600 x 1600	14,7	59,43
RY060170	600 x 1700	15,6	62,86
RY060180	600 x 1800	16,4	66,28
RY060190	600 x 1900	17,3	69,71
RY060200	600 x 2000	18,1	73,13
RY070030	700 x 300	4,1	16,58
RY070040	700 x 400	5,1	20,36
RY070050	700 x 500	6,0	24,13
RY070060	700 x 600	6,9	27,90
RY070070	700 x 700	6,5	26,20
RY070080	700 x 800	8,8	35,44
RY070090	700 x 900	9,7	39,22
RY070100	700 x 1000	10,7	42,99
RY070110	700 x 1100	11,6	46,76
RY070120	700 x 1200	12,5	50,53
RY070130	700 x 1300	13,5	54,30
RY070140	700 x 1400	14,4	58,08
RY070150	700 x 1500	15,3	61,85
RY070160	700 x 1600	16,3	65,62
RY070170	700 x 1700	17,2	69,39
RY070180	700 x 1800	18,2	73,16
RY070190	700 x 1900	19,1	76,94
RY070200	700 x 2000	20,0	80,71
RY080030	800 x 300	4,5	18,24
RY080040	800 x 400	5,5	22,36
RY080050	800 x 500	6,6	26,48
RY080060	800 x 600	7,6	30,60

RY150170	1500 x 1700	30,2	121,64
RY150180	1500 x 1800	31,8	128,20
RY150190	1500 x 1900	33,4	134,76
RY150200	1500 x 2000	35,1	141,32
RY160030	1600 x 300	7,8	31,49
RY160040	1600 x 400	9,5	38,40
RY160050	1600 x 500	11,2	45,31
RY160060	1600 x 600	13,0	52,21
RY160070	1600 x 700	14,7	59,12
RY160080	1600 x 800	16,4	66,02
RY160090	1600 x 900	18,1	72,93
RY160100	1600 x 1000	19,8	79,83
RY160110	1600 x 1100	21,5	86,74
RY160120	1600 x 1200	23,2	93,65
RY160130	1600 x 1300	25,0	100,55
RY160140	1600 x 1400	26,7	107,46
RY160150	1600 x 1500	28,4	114,36
RY160160	1600 x 1600	30,1	121,27
RY160170	1600 x 1700	31,8	128,17
RY160180	1600 x 1800	33,5	135,08
RY160190	1600 x 1900	35,2	141,98
RY160200	1600 x 2000	36,9	148,89
RY170030	1700 x 300	8,2	33,15
RY170040	1700 x 400	10,0	40,40
RY170050	1700 x 500	11,8	47,66
RY170060	1700 x 600	13,6	54,91
RY170070	1700 x 700	15,4	62,17
RY170080	1700 x 800	17,2	69,42
RY170090	1700 x 900	19,0	76,67
RY170100	1700 x 1000	20,8	83,93
RY170110	1700 x 1100	22,6	91,18
RY170120	1700 x 1200	24,4	98,44
RY170130	1700 x 1300	26,2	105,69
RY170140	1700 x 1400	28,0	112,94
RY170150	1700 x 1500	29,8	120,20
RY170160	1700 x 1600	31,6	127,45
RY170170	1700 x 1700	33,4	134,71
RY170180	1700 x 1800	35,2	141,96
RY170190	1700 x 1900	37,0	149,21
RY170200	1700 x 2000	38,8	156,47

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RY080070	800 x 700	8,6	34,72
RY080080	800 x 800	8,0	32,24
RY080090	800 x 900	10,7	42,96
RY080100	800 x 1000	11,7	47,08
RY080110	800 x 1100	12,7	51,20
RY080120	800 x 1200	13,7	55,32
RY080130	800 x 1300	14,8	59,44
RY080140	800 x 1400	15,8	63,56
RY080150	800 x 1500	16,8	67,68
RY080160	800 x 1600	17,8	71,80
RY080170	800 x 1700	18,8	75,92
RY080180	800 x 1800	19,9	80,04
RY080190	800 x 1900	20,9	84,16
RY080200	800 x 2000	21,9	88,28
RY090030	900 x 300	4,9	19,90
RY090040	900 x 400	6,0	24,37
RY090050	900 x 500	7,2	28,83
RY090060	900 x 600	8,3	33,30
RY090070	900 x 700	9,4	37,77
RY090080	900 x 800	10,5	42,24
RY090090	900 x 900	11,6	46,71
RY090100	900 x 1000	12,7	51,17
RY090110	900 x 1100	13,8	55,64
RY090120	900 x 1200	14,9	60,11
RY090130	900 x 1300	16,0	64,58
RY090140	900 x 1400	17,1	69,05
RY090150	900 x 1500	18,2	73,52
RY090160	900 x 1600	19,4	77,98
RY090170	900 x 1700	20,5	82,45
RY090180	900 x 1800	21,6	86,92
RY090190	900 x 1900	22,7	91,39
RY090200	900 x 2000	23,8	95,86
RY100030	1000 x 300	5,3	21,55
RY100040	1000 x 400	6,5	26,37
RY100050	1000 x 500	7,7	31,18
RY100060	1000 x 600	8,9	36,00
RY100070	1000 x 700	10,1	40,82
RY100080	1000 x 800	11,3	45,64
RY100090	1000 x 900	12,5	50,45
RY100110	1000 x 1100	14,9	60,08

RY180030	1800 x 300	8,6	34,81
RY180040	1800 x 400	10,5	42,41
RY180050	1800 x 500	12,4	50,01
RY180060	1800 x 600	14,3	57,61
RY180070	1800 x 700	16,2	65,21
RY180080	1800 x 800	18,1	72,82
RY180090	1800 x 900	20,0	80,42
RY180100	1800 x 1000	21,8	88,02
RY180110	1800 x 1100	23,7	95,62
RY180120	1800 x 1200	25,6	103,22
RY180130	1800 x 1300	27,5	110,83
RY180140	1800 x 1400	29,4	118,43
RY180150	1800 x 1500	31,3	126,03
RY180160	1800 x 1600	33,2	133,63
RY180170	1800 x 1700	35,0	141,24
RY180180	1800 x 1800	36,9	148,84
RY180190	1800 x 1900	38,8	156,44
RY180200	1800 x 2000	40,7	164,05
RY190030	1900 x 300	9,0	36,46
RY190040	1900 x 400	11,0	44,41
RY190050	1900 x 500	13,0	52,37
RY190060	1900 x 600	15,0	60,31
RY190070	1900 x 700	16,9	68,26
RY190080	1900 x 800	18,9	76,22
RY190090	1900 x 900	20,9	84,17
RY190100	1900 x 1000	22,9	92,12
RY190110	1900 x 1100	24,8	100,06
RY190120	1900 x 1200	26,8	108,02
RY190130	1900 x 1300	28,8	115,97
RY190140	1900 x 1400	30,7	123,92
RY190150	1900 x 1500	32,7	131,87
RY190160	1900 x 1600	34,7	139,82
RY190170	1900 x 1700	36,7	147,77
RY190180	1900 x 1800	38,6	155,72
RY190190	1900 x 1900	40,6	163,67
RY190200	1900 x 2000	42,6	171,62
RY200030	2000 x 300	9,5	38,12
RY200040	2000 x 400	11,5	46,42
RY200050	2000 x 500	13,6	54,72
RY200060	2000 x 600	15,6	63,02

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

RY100120	1000 x 1200	16,1	64,90
RY100130	1000 x 1300	17,3	69,72
RY100140	1000 x 1400	18,5	74,53
RY100150	1000 x 1500	19,7	79,35
RY100160	1000 x 1600	20,9	84,17
RY100170	1000 x 1700	22,1	88,99
RY100180	1000 x 1800	23,3	93,80
RY100190	1000 x 1900	24,5	98,62
RY100200	1000 x 2000	25,7	103,43
RY110030	1100 x 300	5,8	23,21
RY110040	1100 x 400	7,0	28,38
RY110050	1100 x 500	8,3	33,54
RY110060	1100 x 600	9,6	38,70
RY110070	1100 x 700	10,9	43,87

RY200070	2000 x 700	17,7	71,31
RY200080	2000 x 800	19,8	79,61
RY200090	2000 x 900	21,8	87,91
RY200100	2000 x 1000	23,9	96,21
RY200110	2000 x 1100	25,9	104,51
RY200120	2000 x 1200	28,0	112,81
RY200130	2000 x 1300	30,1	121,11
RY200140	2000 x 1400	32,1	129,40
RY200150	2000 x 1500	34,2	137,70
RY200160	2000 x 1600	36,2	146,00
RY200170	2000 x 1700	38,3	154,30
RY200180	2000 x 1800	40,3	162,60
RY200190	2000 x 1900	42,4	170,90
RY200200	2000 x 2000	44,5	179,19