

INVERCOTE

CARBON FOOTPRINT
& ENVIRONMENTAL
DECLARATION 2023

HOLMEN
IGGESUND

CARBON FOOTPRINT

Company	Holmen Iggesund
Site	Iggesunds Bruk
Product	Invercote family
Period	2022-01-01 – 2022-12-31

Carbon Footprint Framework

Holmen Iggesund Paperboard calculates the Carbon Footprint of its products based on the guidelines given in the publication “Framework for the development of carbon footprints for paper and board products”.

The framework is available at www.cepi.org

The carbon footprint is updated annually and based on figures from the previous year.

Fossil Carbon emissions	CO ₂ (kg/tonne board)	Percentage of total	GHG protocol scope
Greenhouse emission from paperboard manufacturing facilities	35	19%	1
Greenhouse emission associated with purchased electricity	2	1%	2
Greenhouse emission from producing the wood fibres	22	12%	3
Greenhouse emission from producing other raw materials	110	59%	3
Greenhouse emission associated with transportation	17	9%	3
Carbon Footprint SUM	186	100%	
Biogenic Carbon uptake and storage			
Annual carbon storage in Holmen forest	545 kg CO ₂ /tonne board		
Carbon stored in paperboard	1494 kg CO ₂ /tonne board		

Explanations and comments to Carbon Footprint calculations

Greenhouse emission from paperboard manufacturing facilities
Fossil CO₂ emissions from combustion of fossil fuels during pulp and paperboard production.

Greenhouse emission associated with purchased electricity
Fossil CO₂ emissions associated with purchased electricity.

Greenhouse emission from producing the wood fibres
Emissions from forest management and harvesting.

Greenhouse emission from producing other raw materials
Fossil CO₂ emissions from production of non-wood based raw materials and fuels.

Greenhouse emission associated with transportation
Emissions from transport of harvested wood and other raw materials. Transport to customer is not included as this varies strongly from case to case dependent on transport mode and distance. The emissions related to transport to customer can on request be calculated separately for specific cases.

Explanations and comments to Biogenic Carbon uptake and storage

Annual carbon storage in Holmen forest
Growing forests capture carbon. The quoted figure is calculated by dividing the net CO₂ capture in Holmen’s own Forests by yearly tonnage produced of all Holmen products.

Carbon stored in paperboard
Biogenic carbon stored in the products.



ENVIRONMENTAL DECLARATION

Product	Invercote family, 180-770 g/m ²
Site and company	Iggesunds Bruk, Holmen Iggesund
Paperboard type	Solid bleached board, fresh fibre
Period	2022-01-01 – 2022-12-31

Product composition

Wood fibre pulp	75%-100% of which 100% produced at site
Coating	0%-25%

Sourcing of energy

Internal and procured fuels used for production of process steam and cogeneration of electricity at the site. All electricity used is generated from renewable sources, biofuel from wood by products or water power.

Renewable sources 98% (92% bio energy, 8% water power) | Fossil sources 2%

Environmental load

Production site process waste water discharges, atmospheric emissions and solid waste per tonne board in year 2021 (total environmental load of the production of board produced at the Site divided with total production of board)

Emissions to water

COD	10 kg/t
AOX	0,08 kg/t
Nitrogen	0,18 kg/t
Phosphorus	0,02 kg/t
Water use	65 m ³ /t

Emissions to air

S (total)	0,07 kg/t
NO _x	1,23 kg/t
CO ₂ (from fossil sources)	34,68 kg/t

Waste to landfill

0,17 kg/t

Explanations and comments to Carbon Footprint calculations

Emissions to water Iggesund Mill is situated on the shores of the Baltic Sea, which is classified as a highly sensitive marine ecosystem. The mill complies with the emissions levels set for it by the Swedish environmental authorities by continually measuring discharged water at about 20 test points. Iggesund constantly monitors the conditions of the marine ecosystems around the mill to ensure that their balance is not disturbed.

Process water discharge The Iggesund Mill is geographically located in an area of abundant water supply and there is no shortage of availability. All process water is re-circulated and re-used within the process a number of times. Before final discharge to the receiving water, process water is treated in three steps which includes mechanical, biological and chemical treatment, a combination of treatment technologies considered as Best Available Technology.

COD Chemical oxygen demand is a measurement of the amount of oxygen consumed in the decomposition of organic compounds has its outlet into the sea. The presence of organic by-products such as bark and wood chips gives rise to a COD value. The Swedish environmental authorities set emission levels based on COD to be acceptable to the local conditions and the marine environment adjacent to the mill.

AOX Adsorbable organic halogen is formed in the pulp making process. High levels of AOX negatively affect marine organisms. Here, too, limits are set to be acceptable to local conditions and the marine environmental adjacent to the mill.

Nitrogen and phosphorus Nitrogen and phosphorus are elements that when present in large amounts contribute to the overfertilisation (eutrophication) of marine environments.

Emissions to air – S and NO_x These normally arise from combustion processes used in the production of energy. They contribute to eutrophication, acidification and the creation of ground-level ozone. All emissions are regulated and monitored by the Swedish licensing authorities.

CO₂ (from fossil sources) Carbon dioxide is an invisible gas that occurs naturally but its increased emissions from fossil fuel use are contributing to global climate change. This figure indicates the emission of fossil CO₂ from the production of Invercote. The figure should not be confused with the far broader concept of carbon footprint, which encompasses much of the product's lifecycle.

WOOD SUPPLY AND CERTIFICATIONS

Certifications

Mill's environmental certificates:	FSC® TUEV-COC-000232 (Logo license: FSC-C110018) PEFC™ 44 11 7551 (Logo license: PEFC/05-33-105) ISO 14001 SP-2778 M
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Methods

Certification scheme	Method
FSC® Volume credit system	All FSC® certified deliveries contain 100 % certified fibre
PEFC™ Volume credit method	All PEFC™ certified deliveries contain 100 % certified fibre

Wood supply

All wood used at Iggesund Mill is either certified in accordance with FSC or PEFC or meets FSC requirements for controlled wood. Invercote can be supplied certified in accordance with FSC or PEFC. The wood raw material for the Invercote product is sourced from forest lands that are replanted with new trees in order for it to stay forest. The production of Invercote is to no extent contributing to deforestation.

Wood sourcing information, Iggesund bruk 2022

Country of origin	%	Procurement region	Species	Forest owners	Certificates
Sweden	95,6	Central Sweden	Pinus Sylvestris Pinus contorta, Picea abies ^a Betula spp, Populus tremul	Forest companies and private owners	DNV-COC-000004 DNV-FM/COC-000043 DNVSE-PEFC-COC-006 2015-SKM-PEFC-062
Estonia	3,1	Western Estonia	Pinus Sylvestris Picea abies Betula spp, Populus tremula	State forests and private owners	DNV-COC-000004 SA-COC-007273 DNVSE-PEFC-COC-006
Latvia	1,1	Western Latvia	Pinus Sylvestris, Picea abies ^a Betula spp, Populus tremul	State forests and private owners	DNV-CW-000004 SA-COC-007273 DNVSE-PEFC-COC-006
Norway	0,2	Norway, Vikens Fylke	Pinus Sylvestris, Picea abies ^a	Forest companies and private owners	DNV-COC-000004 DNVSE-PEFC-COC-006

All pulp for the Invercote production is produced internally within the Iggesund Mill. All wood procurement for the production of Invercote is handled by Holmen Skog, a sister company in the Holmen Group. The certificates given in the table above belong to Holmen Skog.

Environmental management

Certified environmental management system	SS-EN ISO 14001 since 2001 COC for FSC and PEFC since 2007
Certified energy management system	SS 62 77 50 since 2005 and upgraded to ISO 50001 in 2011
Food Safety System Certification	22000 (FSSC 22000) since 2021

Handling after use of the product and its packaging

Product recoverable as a material or energy resource. Packaging recoverable as a material or energy resources. Invercote is intrinsically biodegradable. For quantification regarding composting test should be made on the final packaging after the converting process (EN 13432:2000).

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