

INCADA

**CARBON FOOTPRINT
& ENVIRONMENTAL
DECLARATION 2020**

**HOLMEN
IGGESUND**

CARBON FOOTPRINT

Company	Iggesund Paperboard AB
Site	Workington Mill
Product	Incada family
Period	2020-01-01 – 2020-12-31

The ten elements of the Carbon Footprint Framework

Iggesund Paperboard calculates the Carbon Footprint of its mills based on the ten elements (“toes”) and 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 CO ₂ (kg/tonne board)	Percentage of total
1 Annual carbon storage in Holmen forest	-677	
2 Carbon stored in paperboard	-1244	
3 Greenhouse emission (fossil) from product manufacturing facilities	171	48%
4 Greenhouse emission (fossil) from producing the wood fibres	7	2%
5 Greenhouse emission (fossil) from producing other raw materials	137	39%
6 Greenhouse emission (fossil) associated with purchased electricity	14	4%
7 Greenhouse emission (fossil) associated with transportation	26	7%
8 Greenhouse emissions associated with product use	N/A	
9 Greenhouse emissions associated with product end-of-life	N/A	
10.1 Avoided greenhouse emissions, estimate of maximum potential	N/A	
10.2 Avoided greenhouse emissions, due to sale of renewable power from site	-108	
Carbon Footprint SUM 3 -7	355	100%

Comments and explanations to the ten elements of the Carbon Footprint framework

- 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. Calculated with the assistance of Skogforsk, The Forestry Research Institute of Sweden, and the Swedish University of Agricultural Sciences.
- Carbon stored in paperboard
Biogenic carbon stored in the products.
- Greenhouse emission (fossil) from product manufacturing facilities
Fossil CO₂ emissions from combustion of fossil fuels during pulp and paperboard production, including purchased pulp.
- Greenhouse emission (fossil) from producing the wood fibres
Fossil CO₂ emissions from forest management and harvesting.
- Greenhouse emission (fossil) from producing other raw materials
Fossil CO₂ emissions from production of non-wood based raw materials and fuels.
- Greenhouse emission (fossil) associated with purchased electricity
Fossil CO₂ emissions associated with purchased electricity.
- Greenhouse emission (fossil) associated with transportation
Fossil CO₂ emissions from transport of harvested wood, purchased pulp 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.
- Greenhouse emissions associated with product use
Not applicable for Iggesund Paperboard as a board producer.
- Greenhouse emissions associated with product end-of-life
Not applicable for Iggesund Paperboard as a board producer.
- Avoided greenhouse emissions
Avoided emissions of fossil CO₂ by incinerating paperboard waste with energy recovery, which can be viewed as replacing oil as fuel.
Alt.1 is the maximum potential, if 100% of the board is incinerated.
Alt.2 is based on actual sales of renewable power Jan-Dec 2020.

ENVIRONMENTAL DECLARATION

Product	Incada family, 200-350 gm ²
Site and company	Workington Mill and Iggesund Paperboard
Paper type	Folding box board, fresh fibre
Period	2020-01-01 – 2020-12-31

Product composition

Mechanical pulp	46-73 % of which 100 % produced at the site
Chemical pulp	16-26% of which 0 % produced at the site
Coating	6-14 % of which 100 % produced at the site

Sourcing of energy

On site dedicated biomass fuelled Combined Heat and Power (CHP) Plant. The biomass CHP generates the full requirement of renewable electricity and the surplus is sold to the UK National Grid.



Electricity used 980 kWh/tonne

Environmental load

Production site process water use, waste water discharges, atmospheric emissions and solid waste per tonne products in year 2020 (total environmental load of the production of pulp and board produced at the site divided with total production of board and market pulp).

Emissions to water

COD	44 kg/t
AOX	- kg/t
Nitrogen	0,16 kg/t
Phosphorus	0,02 kg/t
Water use	30 m ³ /t

Emissions to air

S (total)	0,09 kg/t
NO _x	0,86 kg/t
CO ₂ (from fossil sources)	133 kg/t

Waste to landfill

17 kg/t

Explanations Environmental Declaration

Product composition

The chemical and mechanical pulp (ECF) used in the production of Incada assures a good hygienic standard as well as taint and odour neutrality. The coating consists of calcium carbonate, clay and a binding agent in various combinations dependant on the end product's property requirements and intended use.

Sourcing of energy

Both thermal and electrical energy are used in paperboard manufacture. The mill is self-sufficient for production of both electricity and steam. The biomass CHP generates the full requirement of electricity and is able to supply all steam. Some natural gas is used for direct heating on the boardmachine and to optimise steam generation. Excess electricity generated is supplied to the National Grid.

Emissions to water

The Workington mill is situated on the UK's west coast. The mill's compliance with all the emission levels set by the UK authorities is monitored by the continuous measurement of discharge levels. Studies of the marine ecosystems around the mill are also made to ensure their balance is not disturbed.

Process water discharge

The Workington 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 open sea process water is treated according to a standard agreed with the authorities

COD

Chemical Oxygen Demand is a surrogate measurement of the amount of oxygen consumed in the environment resulting from the decomposition of organic compounds. The presence of wood extractives and carbohydrates resulting from the pulping process form the main contribution to COD levels. The UK licensing authorities set emissions based on COD levels that are suited to local conditions and the marine environment adjacent to the mill.

AOX

These are adsorbable organic halogens produced during the pulp manufacturing process. High levels of AOX negatively affect marine organisms. The process used in the manufacture of mechanical pulp at Workington does not give rise to AOX.

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 UK licensing authorities.

CO₂ (from fossil sources)

Carbon dioxide is a naturally occurring gas but increasing emissions from fossil fuels are contributing to global climate change. This value indicates the emission of fossil CO₂ from the production of Incada. All energy used will be pre-dominantly from renewable sources resulting in reduced CO₂ emissions. This value should not be confused with the far broader concept of carbon footprint which encompasses much of the product's lifecycle.

Waste to landfill

Sending waste to landfill creates an unsustainable stress on local landfill facilities and is a growing environmental problem. In the production of Incada we have systematically reduced our process waste to zero, with the small balance coming from other mill activities where this waste cannot be reused or recycled.

Water supply

All water used in the manufacture of Incada is locally sourced from the River Derwent. The water used is surface water and not drinking water (ground water). After use the water is cleaned and let out to sea close to the River Derwent estuary area of the Solway Coast.

WOOD SUPPLY AND CERTIFICATIONS

Certifications

Wood traceability certificate:	FSC TT-COC-002067
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Methods

Certification scheme	Method
FSC® Mix	All FSC certified deliveries contain 100 % certified fibre according to the volume credit system.

Wood supply

All the mechanical pulp used in the production of Incada is produced onsite from locally sourced UK grown spruce, with independent verification according to FSC. The wood raw material for the Incada product is sourced from forest lands which are replanted with trees to grow new forest. Therefore Incada manufacture doesn't contribute to any land use change or deforestation.

Wood sourcing information, Workington 2020

Country of origin	%	Procurement region	Species	Forest owners	Certificates
United Kingdom	80	Northern England Scotland	Picea sitchensis	Forestry Commissions and private owners	SA-FM/COC-006972 SA-FM/COC-007002

Pulp supply

All of the chemical pulp used in the production of Incada is manufactured from birch, pine and spruce supplied by our sister mill Iggesunds Bruk in Sweden and plantation eucalyptus from approved mills in Iberia.

Pulp sourcing information, Workington 2020

Country of origin	%	Procurement region	Species	Forest owners	Certificates
Spain	14	Navia	Eucalyptus	Private companies	SCS-COC-004865
Sweden	6	Central Sweden	Pinus sylvestris, Picea abies, Betula spp, Alnus spp	Own forestland private owners	TUEV-COC-000233

Environmental management, certified systems

Environmental management	ISO14001:2015 LRQA 10273710 since 2003
Energy management	ISO 50001:2018 LRQA 10273710 since 2015
Environmental licence no.	BJ7590

Additional certifications

Incada is intrinsically biodegradable. For additional certifications like compostability and recyclability please contact your representative at Iggesund Paperboard.

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**HOLMEN
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